CHICAGO USERS GROUP PRESENTS

CHICAGO TIMES

NEWSLETTER OF THE CHICAGO TI-99/4A USERS GROUP

WE SUPPORT YOU: PLEASE SUPPORT US
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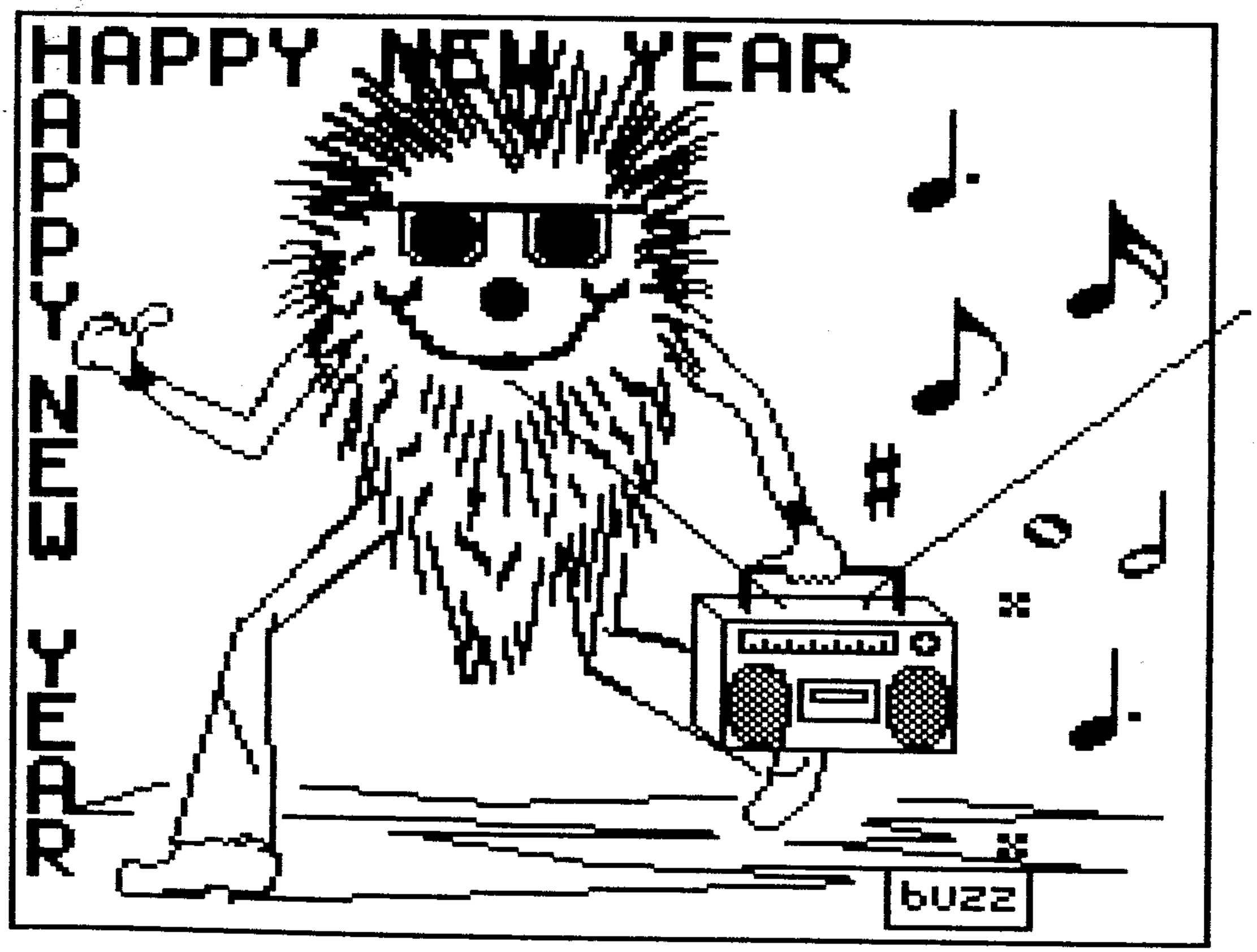
DEC. 30, 1986

EDITOR: Carole Goldstein



THE JANUARY MEETING. . . .
will be held on Saturday JAN. 10, 1986 from 1:00 to 3:00 in the Ironwood Room at Triton College.

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Artwork by Buzz Krantz and Dan Granowski

BULLETINS:

The Beginners SIG will meet shortly after the meeting.

We are planning to start a Pascal Sig if there is enough interest. Please let us know if you would be interested in attending this SIG after the meeting.

MEETING DATES FOR THIS COMING YEAR ARE AS FOLLOWS:

JAN 10	JUNE 6
FEB 7 (TI FAIRE)	SEPT 12
MAR 14	OCT 6
APRIL 4	NOV 7
MAY 2 (Ironwood Room)	DEC 5

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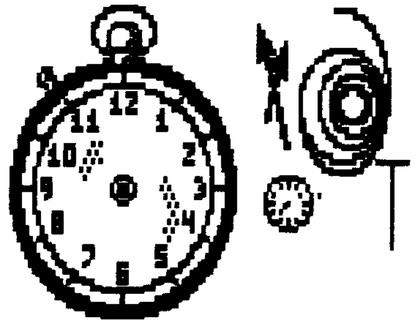


THE DISASSEMBLY

Dave Wakely

The last meeting; the next meeting; Faire fallout; New machine?; Texincia revealed; Other THings:

After a few delays caused by a flood and our 4th TI Faire, Rich Klein finally was able to demo the Mechatronics GRAM-CARD for us at the December meeting. Perhaps I expected too much, but frankly I was less than wildly enthusiastic about this product. Perhaps, too, since the Gram Kracker has now been around for approximately one year (introduced at our 3rd Chicago Faire in November, 1985), we have all become somewhat jaded about custom modified console GROMs and GRAMs. What did sharpen my interest in this product, however, was the related news that Miller's Graphics has announced that it will no longer be producing the Gram Kracker. More about this later. Also at the meeting, Jack Topham was pressed into quick service to give a demonstration of the STAR Extended BASIC enhancement package. This is a shareware product which adds many commands to your existing XB language by providing "CALL"s to assembly routines. The few short demos we saw were impressive, and with distribution of these routines through various user groups, with luck we will begin to see some programs appear which take advantage of them. In theory, STAR reminded me of the SXB (Super Extended BASIC) package which originally came out a few years ago. The problem with SXB was that it listed for $100 and there were NO applications written for it. I believe it is still around, but it never received much attention from the users. Hopefully the same fate will not befall STAR. Come to think of it, hopefully the same fate will not befall Jack Topham. It really is unfair of us to ask someone to get up and demo something when he has not been asked in advance to do so, but being the team-playing group member that he is, Jack pulled it off quite well, I thought, letting STAR mostly speak for itself. Thanks, Jack. To help keep the meeting agendas flowing smoothly, the program committee is now chaired by former group President Butch Goldstein, and I am sure Butch will be lining up an interesting year of speakers ahead.

After the demos were finished, the annual group elections took place, and, as recommended in this column, Sandy Bartels, our TI Faire coordinator for the past two years, was elected group President for 1987. Perhaps elected isn't quite the right word. When it was apparent that no one else was running, it was moved and seconded that she be declared President by acclamation. You couldn't have made a better choice. Congratulations, Sandy, you have earned it. The December meeting concluded with our annual Swap meet. Various group members brought in spare equipment and original software which was set up on tables in the back of the room. I thought it was interesting that there appeared to be only two P.E. Box systems for sale. Rather strange for a computer which has been "dead" for three years, wouldn't you say?

For the January meeting, which you should note will take place on Jan. 10, 1987, we have asked several group members to demonstrate what they are doing with TI graphics. Specifically, Frank Gronowski, who has done the last few covers of the ChiTImes, will be showing some of his artwork with TI Artist, and Paul Farber will then do likewise with

Joy Paint. Both will be demonstrating how to use the features of each program to build pictures during an actual session. Also, group librarian Bob Demeter will be demoing the PR Base data base program and maybe one or two other things from the library. For the February meeting, we have asked the folks at Competition Computer in Milwaukee to come down and talk about printers. They will be demonstrating several different types, as well as showing you how to care for, clean, and maintain your printer in good working order.

Post Faire: We are still trying to get our act together concerning the video tape of the Faire. Grant Schmalgemeier tells me that it is now being edited and will be ready for distribution shortly after this is completed. The group has also received several letters from vendors and speakers at the Faire, some of which may be reproduced here by Carole. There probably isn't much left to say about the Faire except that its success ensures that there will be one next year. A volunteer(s) to coordinate the '87 Faire is (are) being sought. One of the few presentations I was able to see in its entirety was the delightful musical session by Fete Hoddie. People sometimes ask "but what can I do with my computer?" Those who saw Fete play accompanied by two 99/4As perhaps had their imaginations sparked by this innovative presentation. And finally, I thought all TI hackers were supposed to look like they shopped for clothing in the nearest alley? Especially the types who are into writing compilers like Clint Pulley with his C99. Between the tie and the tweed jacket, Clint reminded me more of a college professor than a typical TI programmer. Maybe this means that you can't generalize about hackers after all. Does this also mean that our own Nick Iacovelli will soon be seen at group meetings in a three piece suit? Well, maybe there are still some hackers you can count on to live up (down?) to their image after all.

Ho-Hum, another new TI compatible: First it was rumors about someone (they ranged from GE to Toys R Us to the State of Israel *I am not making this up*) purchasing the rights to the 99/4A, then it was going to be the CorComp "Phoenix" computer, then the Myarc stand-alone TI compatible (remember the case from last year's Faire?), now, it appears that the Geneve P.E. Box card upgrade will go into production. And tomorrow? Miller's Graphics (now known just as MG) has persistently stated that an announcement will be made in January regarding a new computer, apparently with IBM PC compatibility as well, from a "large" consumer electronics company. Will this be a PEB card which allows the TI to emulate an IBM PC, or a PC clone which has a selectable "99/4A" mode (there seem to be hints both ways)? Or is this all just so much more of the "vaporware" we have been hearing about for the past three years?

What I recently received in the mail was a brochure from MG advertising their usual software products, but also with a short blurb which mysteriously alluded to a new hardware/software product. In this announcement, Miller stated that he has been contracted by "a large US company to design a piece of interface hardware and software for the 99/4A to allow it to use both IBM hardware and IBM Software". In following this up, group member Mike Chappell recently called Miller to see what further information he could get about this. While Miller was quite close-mouthed, he did state that MG had decided to stop all production of the popular Gram Kracker, citing increased parts cost and decreased availability. Word has it that if you don't have a Gram Kracker now, you are not going to get one. I don't know about you, but this certainly leads me to some intriguing speculation.

First of all, why drop the Kracker? Could it be that the profit margin on this versatile unit was cut to the minimum from the beginning? Given the large start-up cost of any project like this, it seems unlikely that MG was giving the unit away. Is it at least possible that this new IBM compatible unit will emulate all the functions of the GK, and at a price which would render it obsolete? Why not just up the price of the GK slightly to cover the increased cost, and continue to make money on the GK utilities like the one advertised in the MG brochure? Even with slowed sales at a higher price, that gives a larger base to sell future software. Very interesting, no?

In the same blurb, Miller states "This unit could be thought of as an IBM Expansion System since it will not only allow you to use IBM software but you can also add IBM cards to the system!" Wait a minute here, a piece of interface hardware for the /4A which accepts IBM cards? This whatever-it-is has got to have some wierd kind of architecture, doesn't it? Could it be that Miller has managed to put some or all of the basic 99/4A GROMs on an IBM card so what we will be getting is an IBM clone? What if I already have an IBM clone, could I use this new hardware with that? And if Miller has done this, what about various copywrite and patent infringements on TI's console chips, operating system, etc.? Unless of course...no, you don't suppose by "large US company" he could possibly mean a giant, southern based microchip manufacturer which abandoned the home computer market several years ago and whose own PC hasn't been doing very well lately? Do you???

But wouldn't that be a kick! Hey wait a minute, as long as I am speculating, how about...wait for it...BIG BLUE itself! Silly? Remember that this is the company which wanted into the home market in the worst possible way, and with the PCjr achieved exactly that. They already have the high end market (what there is of it) with their PC- RT machine, and while the Asian clones try to grab the base PC market, IBM can deal a blow both to them and possibly the Amiga and 520STs as well. IBM has already stated that there will be several new hardware announcements in 1987, and there are rumors of a new operating system which will integrate their entire line of PCs. Ah well, I just hope this product a) Functions at least roughly as rumored. b) Is ready to ship NOW. c) Offers a PC clone which can compete with some of the current high powered clones. d) Is priced in the current clone range.

About point c, the days of the 4.77 Mz "base PC" are about over when you can purchase AT clones for a price falling near $1000. This machine had better run at 6 Mz at least, accept 640K on the motherboard (or whateverboard), come standard with video and disk controllers, serial and parallel ports, and provide a minimum of 5 available expansion slots. Why am I demanding so much? Because if this machine isn't in this class it just isn't going to sell. Hopefully Miller and the "large US company" know that the masses are gobbling up $600 PC clones which can run rings around the original IBM PC. If they offer a machine which can do no more than the original, why spend the money? If I need IBM compatibility, I'll just buy a clone and keep my TI too. And some of us have done just that. On the other hand, offer a solid, reliable machine which approaches the "PC screamer" performance range, throw in complete TI compatibility (with enhancements like 80 columns, better graphics, etc), and you are reading the writing of someone who will be selling his present two computers to get one. And, bye-bye Geneve. We may know the whole story by the time of the January meeting. If the machine exists and delivers as hinted for even a reasonable price, our long-awaited day of salvation is near. You don't think that tens of thousands of fully expanded TI owners will pay $600-$1000 for an IBM clone which has full 99/4A compatibility? 1) Add up what you have spent so far on your system; 2) realize that this machine may be marketable as a PC clone with thrown in TI compatibility, thus appealing to a whole new market; 3) it will possibly create a large pool of used TI equipment, allowing the bare console people to expand cheaply. That is, if whoever it is does it right. The only other imaginable configuration which fits the description would be an IBM card for the PE Box with a cable which goes to another expansion box which accepts IBM cards. Somehow I don't see a large market for a product like this.

Fun while it lasted: Okay, this column has gone on long enough. I am going to make this short and sweet. For some time now, actually several years, someone has been writing a column in this newsletter under the name Texincia Lubbock. First, let us assume that no one would name their daughter Texincia, and that this "person" sprang from the imagination of someone who had just gone through the TI pullout of 1983, when we were all a little demoralized and needed something to spark us as to the possibilities still inherent in the 99/4A. Texincia made her debut in Vol. 3, No. 1 of the ChiTImes, dated Jan. 15, 1984. This was the second issue of the newsletter edited by group secretary Bruce Barnes, and the first one to appear in the present (roughly) 6" by 8.5" format.

Those first few Texincia columns were rather tame compared to more recent offerings, but each one was slightly more "bold" than the last. Bruce Barnes later left the group, purchasing a TRS-80 Model 4, at the time a fairly powerful alternative to the expensive IBM PC. We were sorry to see him go, as Bruce had worked hard for the group in several capacities. Carole subsequently took over the newsletter editorship.

Then Texincia resurfaced in the ChiTImes, slightly more than a year ago, and has been a relatively steady fixture (so to speak) ever since. Questions directed to Carole about the real identity of Texincia are always met with denials to provide the requested information. The new Texincia sounded, and apparently "acted" much like the old, but recently, she even "wrote" like the old Texincia. Let me explain. Most writers have their own pet phrases or linguistic habits, and often use them unconsciously. In Byte magazine, Jerry Pournelle is famous for his "Alas" and "Real Soon Now". Wakely has his bad puns, and I can tell when Jack Topham really likes a program he is reviewing ("Super!"). Like I said, writers will use these trademarks without even being aware of them.

Now I would draw your attention way back to Vol. 2, No. 8 of this newsletter. I was the editor, and those were the days of two or three pages of 8.5" by 11" double column format. In that issue was the following article in preparation for our first TI Faire:

HI-HO COME TO THE FAIRE!

(special from: Bruce Barnes, Group Secretary)

"TI 99/4A COMPUTER FAIRE-noun, A regular or special meeting, at a stated place and time, of buyers and sellers, with the common goal of continued enlightenment for and about the Texas Instruments Home Computer" (proposed addition to THE NEW AMERICAN WEBSTER DICTIONARY)

Now note the following from the recent September offering of "Texincia":

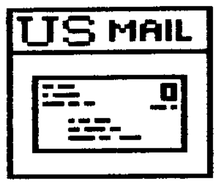
COMMODORE: n the senior or commanding officer of more than one ship or yacht; in the US Navy, a rank next above Captain; as computers go, a very slow computer.
COMMODE: n a small bedside cupboard; slang a toilet.
COMMODORE THEATRE: allogrythem (sic, and another clue) designed to identify the COMMODORE (COMPUTER) as the true COMMODE it really is.

Yup. Bruce Barnes was, and still is, Texincia Lubbock. Oh, I can already hear the vehement denials from Carole, and I expect that the "RAM BUGS" column will have a few choice, and perhaps even printable things to say about this too. Don't believe any of it. The clear evidence above will be passed off as mere linguistic "coincidence" (right, and my grandmother programs in Assembly Language!). Some of you may even be saying to yourselves, "Okay, wise guy, I remember Bruce, so how come Texincia writes about things that happen at the meetings when there is no one there who looks like him?" Wise guy answer: It helps if you know that Butch, Carole and Bruce are good friends who speak often. Go back and read some of Texincia's columns. There is really nothing there which couldn't be relayed in a short phone call. "And by the way, Bruce, Lary McMahon showed up at this meeting." See what I mean?

Actually, it is nice to know that Bruce is still involved even indirectly with us. For all I know he even kept, or repurchased a 99/4A. I will conclude by noting that if anyone who has ever been a member of our group had the chutzpah to try to pull this off, it was Mr. Barnes.

SubrouTInes: Related to the above, one of our least well publicized endeavors has been the "Draw Texincia" contest. Carole, perhaps suspecting what was coming in this column,

has turned over several disks of entries to me, and declared me the sole judge. If I make the newsletter deadline, there will be a separate article about it here, otherwise next month. Any entry which resembles Bruce wins...Buzz Krantz reports that he has in captivity the world's first digital parrot. It seems this bird lives in the same room as his 99/4A and can perfectly imitate the sounds of his dot-matrix printer. And Pam can do a passable impression of the bird doing the printer. Bruuupp! Bruuupp! Bruuupp!...Got some time off over the holidays? It is not too early to start programming for our upcoming 4th annual programming contest. Expect cash prizes as usual...And Grant keeps telling me he wants my home telephone number. Why is it that I see this as equivalent to inviting "Jason" to a Halloween party?...



LETTERS

November 14, 1986

Dear Sandy,

Thank you very much for the terrific hospitality which I received during my visit to your TI Faire. I really appreciate having been invited and that weekend was the high point of my four years as a member of the TI community.

As you may have noticed, I was a bit nervous before my talk as I haven't had much public speaking experience. However, the comments and reviews which I've heard and saw make me think I didn't do too badly!

I'm now getting back to work on c99, both for the /4A and Geneve. I expect to be sending out the update notices for the new release (which I announced at the Faire) later this month. After that, my major activity for a few weeks will be answering mail!

Thanks again for inviting me, making all the arrangements, and running such a great Faire.

Sincerely,

Clint Pulley

- - - - - - - - -

Sandra-

Thank you for making our trip to Chicago a successful one. You did one heck of a job (not to forget the rest of the group)!

Hope to see you again at next years Faire.

Steve Lamberti
Texaments

- - - - -

FROM Joe T. Shafer
Rt. 6 Box 600
Huntsville, Texas 77340

BASICALLY YOURS

Rich Klein

Well, well. When you read this, the holiday season should be upon us. I figure you should get this sometime between Christmas and New Year's day. If that's the case, then I hope you had a Merry Christmas and more importantly, will have a safe and prosperous New Year.

At the December meeting I had the (mis-)fortune to demonstrate the Gramcard by Mechatronics. I would like to clarify a few things, as I was a bit rushed then. First, I was disappointed with the Gramcard *package* as a whole. I felt that, while the physical hardware (the card itself) is probably a superior piece of work, the software and firmware provided for it was less than adequate. If more and better software were written for it, including the loader on the card itself, then the Gramcard could probably be a device of which we could all be proud.

In last month's newsletter, our own Dave Wakely suggested that perhaps not every one who might attempt to repair a disk file that they had blown might have the capability to convert from Decimal to Hexadecimal to Binary on their Bowmar Brains (original calculators). Advanced Diagnostics, the disk utility that I use, has a function built in which converts a number from one base to the other two bases; the bases being Decimal (base 10), Hexadecimal (base 16), and Binary (base 2). I can't speak for the other disk utilities out there, since I neither own nor use them. Also, if you look around, there are calculators around for as low as ten dollars which can perform these conversions. My fifteen dollar Casio does these and Octal (base 8) as well, just in case I run into an antique computer.

Let's see how a hex number can be converted to decimal. Just like Decimal numbers, hex numbers have digits whose value depends on their place in the number they represent. The value of a given digit in a given place differs from decimal, however. If a digit is in the units place, then it equals itself time sixteen to the power of zero, or just itself. If it is in the second place from the right, it would equal itself times sixteen to the power of one, indicating how many sixteens there are. If it is in the third place, then it would equal itself times sixteen to the power of two. or itself times sixteen times sixteen (no, this is not a typo). Since sixteen times sixteen equals two hundred and fifty six, then this value would indicate how many two hundred and fifty sixes there are in the number.

The main disadvantage to hex numbering lies in our own shortcomings as humans. All our lives we've trained ourselves on the decimal system and even developed a set of digits exclusively for our base 10 numbering. When thinking in terms of Base 16, we find that we are six digits short of expressing ourselves fully in hexadecimal. For that reason, we use the letters A-F to express the values ten through 15 as a single digit.

If we were to use the computer to convert a number from hex to decimal, we would have to manipulate the Hex number as a string and do some fancy footwork to convert it to Decimal. This is because of a limitation in Basic that does not allow direct entry or access of Hex numbers. All math operations must be performed in Decimal.

There are several ways to convert the digits in a Hexadecimal string to their Decimal equivalents. The range of possible values is from zero to fifteen. We could single out the individual Hex digits, get their respective ASCII codes and subtract an appropriate

amount from that to get a Decimal value, but since the digits 0-9 and the letters A-F are not assigned successive ASCII codes (0-9 assigned ASCII 48-57 and A-F assigned ASCII 65-70) then the coding necessary to decide what that ASCII code is and how much to subtract from it to put it in the range of 0-15 would be rather cumbersome, much like this sentence.

A better way would be to place all the hex digits into a string and then find the POSition of any single Hex digit in that string. If we create the following string:

```
100 H$="123456789ABCDEF"
```

and then use the POS function like this:

```
150 DEC=POS(H$,HEX$,1)
```

where HEX$ contains the Hex digit we would like the decimal value of. Obviously, H$ equals the string created above, and the one following this mess indicates we want the *first* occurence of HEX$ to be indicated. If the hex digit is found, then DEC is set to its position in the string, which would correspond to its decimal equivalent (notice that the Hex digit "A" is in the tenth position in the string). So now DEC equals the decimal equivalent of the Hex digit that was checked.

What if the Hex digit is zero? Zero is not included in H$. This is done for two reasons. The first is that if you include zero in the string, then all the decimal values returned would be one too high. An adjustment would be necessary, which would result in another program line or, at least, more coding to wade through. The second reason is that, if the POS function does not find a particular occurence of a string, then it reports back a zero, which, in this case, is what we want. An interesting side effect of this is that this can be used for error trapping. If its not in the string, then treat it as a zero.

Here is a listing for a simple Hex/Decimal conversion routine. It will accept any length Hex number and convert it to Decimal. It will treat any invalid digit as if you had entered a zero and apply it in its place in the conversion. The power that any particular value will be raised to will be determined by its position from the right end of the string, that position being zero. This is accmplished by subtracting the current position in the string from the overall LENgth of the string. Needless to say, a loop is used to extract each Hex digit and figure the power a number is to be raised to. Here it is:

```
100 H$="123456789ABCDEF"
110 INPUT "HEX NUMBER? ":HEX$
120 B=LEN(HEX$)
130 FOR A=1 TO B 140 C=B-A
150 DEC=DEC+POS(H$,SEG$(HEX$,A,1),1)*16^,*C
160 NEXT A
170 PRINT HEX$;" =";DEC;"DECIMAL": :
180 DEC=0
190 GOTO 110
200 END
```

Explanation:

100 Sets up our string as discussed earlier.
110 Prompts user for Hex number input which is placed into the string variable, HEX$
120 Sets B equal to the LENgth of HEX$
130 Starts Loop A and sets its count from one to the LENgth of the Hex String which is contained in B.
140 Sets C up to contain the "power" of sixteen that the resulting decimal value will be

raised to.

150 The workhorse of this routine. Uses the SEG$ function to determine which digit is being worked on, then uses the POS function to find its POSition in H$, then multiplies it by sixteen raised to the appropriate power and adds it to the current value of DEC.

160 Increments loop counter A and determines if it exceeds the upper limit and branches back if not.

170 Prints the Hex number entered and the resulting Decimal equivalent.

180 Sets DEC back to zero.

190 Returns execution of the program to the INPUT prompt and waits for a new input. To break the running program, press FCTN 4.

200 Indicates the END of the program. Not absolutely necessary, But I put it there anyway.

I'm not sure, but I think that I've covered this topic before, but I couldn't find in the back issues on hand. Since I can't find proof, let's go on. It's just as simple to convert from Decimal to Hexadecimal. The process is even similar. We can use H$ with one minor modification. We need to include the zero because we'll be using the SEG$ function to convert back and it does not allow the use of the value zero as a parameter. Here it is:

```
100 H$="0123456789ABCDEF"
110 INPUT "DECIMAL NUMBER? ":DEC
120 NYT=DEC
130 NXT=INT(NYT/16)
140 NOW=16*(NYT/16-NXT)
150 HEX$=SEG$(H$,NOW+1,1)&HEX$
160 NYT=NXT
170 IF NXT THEN 130
180 PRINT DEC;"= HEX ";HEX$
190 HEX$=""
200 GOTO 110
```

Explanation:

100 Set up H$

110 Ask for Decimal number to be converted and place it into DEC.

120 Move DEC into NYT because we don't want to disturb DEC.

130 Sets NXT equal to the integer of NYT divided by sixteen. We call it NXT because we'll use it NeXT time for a new figure.

140 Sets now equal to the *fractional* remainder of NXT divided by sixteen, which can only be a number between 0 and 15.

150 This is where we build our Hex equivalent of the Decimal number. Each time we get a value from now we use SEG$ to find the digit or letter equivalent. Since the first Hex digit is the least significant digit, then we place each sucessive digit *before* the previous one. That is why the SEG$ comes before the HEX$ already constructed. One was added to the value of NOW because of the necessity of including preventing a zero from popping up here.

160 Sets NYT equal to the current value of NXT. This is because we want to work only with the the integer value generated in the previous iteration.

170 IF NXT is the same as IF NXT<>0. This means that if NXT equals zero, then there is nothing left to convert and execution continues on the next line. If NXT is not equal to zero, then more conversion remains to be done and a branch is taken back to Line 130 to continue with it.

180 Prints the result of the Decimal to Hex conversion.

190 Resets HEX$ back to a "null" string before next loop through.

200 Causes execution to return to Line 110 to get a new number to convert. To break

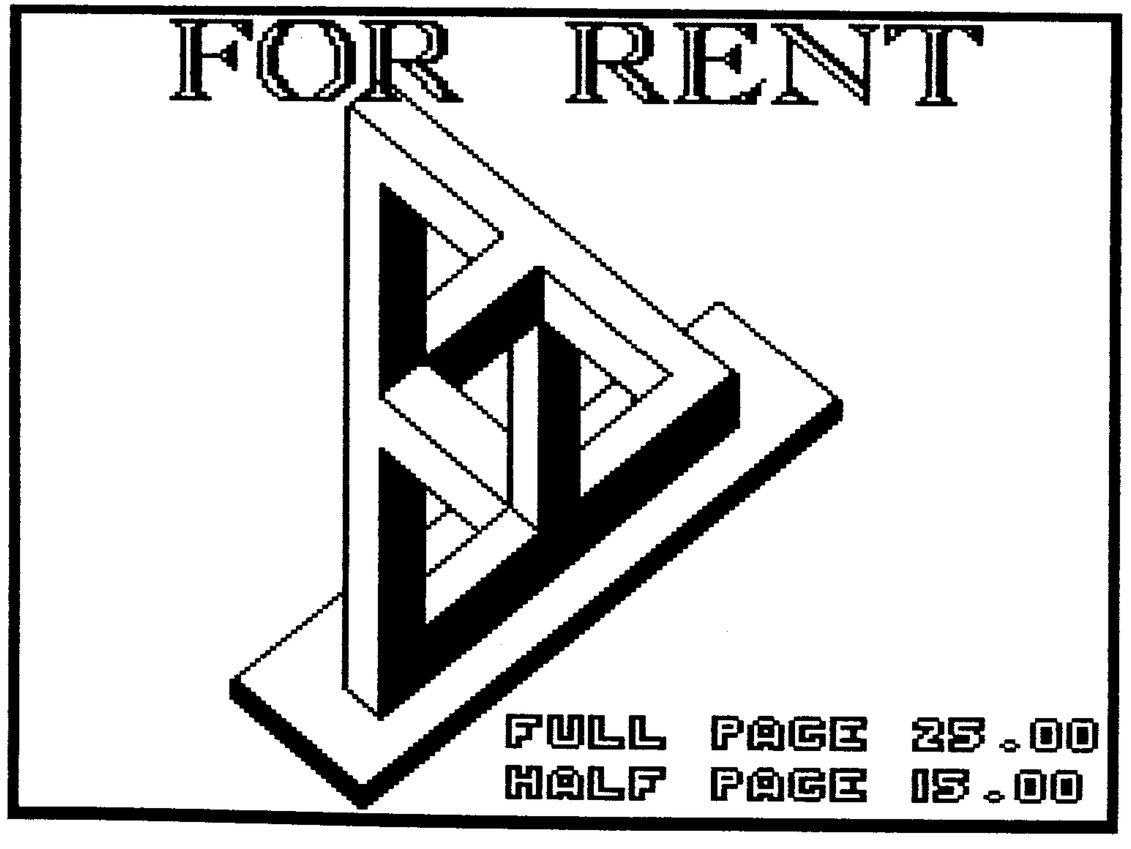
the running program, press FCTN 4.

To convert a number to Binary, it must be in decimal format first, since Basic only does math in Decimal. If the number is in Hex, use the Hex to Decimal conversion first, then the following routine:

```
100 INPUT "DECIMAL? ":DEC
110 DEC1=DEC
120 DNX=INT(DEC1/2)
130 DNO=2*(DEC1/2-DNX)
140 BIN$=STR$(DNO)&BIN$
150 DEC1=DNX
160 IF DNX THEN 120
170 PRINT DEC;"= BINARY ";BIN$
180 BIN$=""
190 GOTO 100
```

Notice that the Binary conversion and the Hex conversion programs are similar. If you made minor changes to the Hex program, you could select which conversion to do. In fact, Anyone who wishes may use these routines or make up their own, and if they show merit, I'll include them in a future column.

I think that if anyone had any problems with number conversions before reading this, should not only have a good working knowledge of conversions, but also may be sick of reading about them for a while. See you all soon!



library shelf

— Bob Demeter —

I'd like to start this month's newsletter off with a rebuttle. There was an article in another user group's newsletter that made reference to our fairware prices. The cost of the fairware disk has nothing to do with the author. You, as the buyer have the responsibility of paying the author for their work. Each fairware program in the library cost $2.00. This includes the disk, program, and a small copying fee. I've spoken to several fairware authors and they feel this is a fair price. You may notice a difference in fairware program prices. The policy of the group is to charge $1.00 for each disk used. Thus, fairware the requires 2 disks cost $3.00.
Now we come to the point of the DIRECTOR 99 program. This disk sells for $3.00 but is only 1 disk. There are 3 seperate programs on the disk. All of which are fairware. Now that's 3 fairware programs for the price of two. I feel that these programs all enhance one another. As such, I didn't feel the need to make 3 seperate disks totaling $6.00 . I hope the author of said article realizes what we are doing here. We are trying to provide a service here. NOT rip authors off. I feel that the $3.00 charge for 3 very nicely done pieces of fairware is more then fair. I will contact Mr. Neal this week and see how he feels. I'm sure he will agree with me. If not, then I will do as he wishes. As far as $4.00 disks, yes, we have them. These are not fairware. These are our public domain library programs. Each disk contains at least 10 programs. The group has adopted the policy of charging $1.00 per program. Adding the $1.00 charge for disk copy fee would give us a charge of $11.00 . I think the users are happy to pay the $4.00 fee. If you check out the price structure of AMNION you will see we are well within their limits. I will let all the readers know the out come of my conversation with Bob Neal.

Jack Topham, stand up and take a bow. What a beautiful demo on STAR. Thanks to you and your routines, the library table was swampped. I wish I could add your routines to the disk. Unfortunately the disk would have to be 367 sectors long. I spoke with Mike Riccio today and he said it would be alright. But, where do I put them? This will be something we'll have to decide. We'll need Jack's permission before we do anything. Mike asked me to make 2 announcements. First, there is a minor error in his STAR program. He asks or warns you not to do a REVERSE with a NULL STRING. Second, his well documented source code is for sale to all registered owners. Mike tells me that you could well learn assembly by studing his source code.

Speaking of STAR, I have a few things to say. One, the demo Jack gave shows what can be done by writing your own programs. The menu on the demo does not come with the disk. 2 other files are not included. They are SCREENLOAD FLASH. These are files Jack wrote to run his demo. STAR resides in memory and can be called from your Xbasic with CALL LINK statement. Please do not expect to buy this disk and have it come up with the screen from the demo. Two, I have several copies of STAR. Or should say had. I made a couple of masters from my copy. I hear there my be some problems with some of the copies obtained at the Dec. meeting. I have no way of telling as I sold my masters when we ran out of blanks. My master works fine. If anyone feels they have a bad copy, please let me know. You may return the disk directly to me via mail. If you are in no hurry, you can see me at the Jan. meeting. Please mail bad disks to: Bob Demeter 2139 Lake Ave. Whiting, Ind. 46394-1833. Remember to include your name and address. I will in turn recopy the STAR program and return to you. Make sure the bad disk you send me is the STAR program I sold. Sorry, I can't return a good STAR for a bad Dis-assembler, etc.

Ok, here's a good announcement. I'm happy to say we finally have the 2 disk SS/SD version of J P Graphics in the library. I've been
waiting quite a while to get a working version. Now it's here. As most of you know, JP Graphics is a Forth drawing program by J P Morin of the Ottawa Users Group. This program will auto load from Xbasic and contains a drawing demo with music. The 2 disk set is $3.00 Those users that have placed orders with prepayment for JP Graphics wil receive it shortly. If you don't hear from me in 2 weeks, please remind me.

This was my lucky week. 2 other pieces of awaited fairware arrived. I now have the source disk for MARCO-ASSEMBLER. This is a new assembly language written by R.A. Green of the Ottawa UG. (see Oct. 31 newsletter).
Also received this week was c99 Rel 3. Clint Pulley's addition to c99 Rel 2. You'll find a new compiler and some added features in this one. Check it out. MARCO-ASSEMBLER $3.00 c99 REL 3 $2.00

We're not done yet. How about a super cart loader that does Myarc Ramdisk routines? Surprise surprise! Yes we have it. I don't know how John Birdwell finds the time. His latest release is SC LOAD 4.3 . This program loads from super cart E/A menu option 5. After you have it loaded, return to the title screen. Pressing any key will give you a page full of menues. There are a total of 3 pages. By pressing the key corresponding to the program of your choice, the cart will access the drive that contains that particular file. This program, in conjunction with your super cart, should run most all of your E/A programs with a couple keystrokes. Pressing function 5 will take you to the Myarc Ramdisk routines. This feature gives you the ability to load programs into the Ramdisk. It also does a Partition, Volume and Emulate command. The program is set up to work with a 512K card emulating disk 1. John has included instructions on how to change all that. Other features include: Ability to emulate TI-Writer cart, E/A editor based on TIW, TIW based editor for use with c99, and a modified version of Fasterm 1.16 that gives a complete disk directory. Way to go, John. I think you super cart fans are going to love it. It's in the library for $2.00 . Please don't forget to send the author his dues. George Lempeotis approached me at the Dec. meeting. He handed me a disk and said he's like to put it in the library. The disk had a label bearing the name DTEST. I later met with George and put DTEST through it's paces. A very nice piece of work, George. The D stands for disk and TEST for tester. This is a well written E/A disk sector editor. There are 2 versions on the disk. One runs in option 3 the other option 5. You can address drives 1-4, read sectors forward or backwards one at a time, or jump to a different sector. You can also edit and write to sectors, read them in Hex or ASCII, or search for a string. If at any time you get confused, just hit ? and you'll be returned to the menu screen. Last but not least, George lets you print the screen display to your printer. Boy, I tell you. It's these quiet guys you have to watch out for. Very nicely done, George. I like it and I think the members will too. Please pick one up at the meeting or order by mail. DTEST $2.00 .

Let's switch to something else for a while. As you know, the Chicago UG sells a catalog of library listings. The book is sent to all non-attending members. It's available to attending members for $1.00 . The library is getting bigger and bigger all the time. As we add programs, we talk about them in the newsletter. That's all well and nice but doesn't tell you how to order them. The library listing contains 70 disks. If you look close, you'll see we made a mistake and listed disk 39 twice. Once as 39 and again as 41. We are going to attempt to update the library listing by adding a pull-out section to the newsletter. (Some juicy graphics for this one. Okay, Buzz?) In order for it to work, we will need at least 4 pages of listings. So, this won't be a monthly item. Each listing will look like the ones in the book. It will contain information on 4-6 disks. We'll start with 41 to fill the void and go on from 71. Each month we'll describe a new disk as before. But now, we'll give you a disk number. You can then look for a pull-out in the same or following issue of the newsletter. I want to see everyone ripping their newsletters open to the center fold and check out the library listings.

The library has picked up a few more disks of RLE pictures. They'll be added to the listing this month. We also got about 18 - 20 more programs to add. I didn't have time to run them all. So, look for them in the next issue. Also, look for these programs soon: Stu Olson's Mass Transfer 4.0, Ottawa User Group's MP Sideways Dump and Graphic Labeler, and Paul Charlton's new Fasterm. I received 3 of the 4 about an hour ago. Beings this is the 15th and Carole needs this article today, we'll review them next month.

Short note: A lady approached me at the Faire about some software she ordered a year or 2 ago. Please contact me again. I need some information. Thanks!

On behalf of John Behnke and myself, I'd like to thank you for the fine support you've given the library. We hope you like'd what we did this year and will continue to support us in the new year. May your holiday season be happy, joyous, and safe. The TI has enjoyed a prosperous '86 and we hope to see it continue in '87.

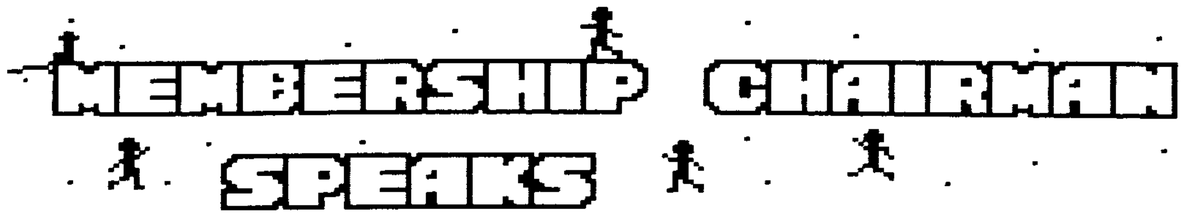
Merry Christmas everyone. And Happy New Year.

John * Bob
%%%
%%%

IN MEMORIAM...GERHARD "BARNEY" KUGEL

Gerhard "Barney" Kugel, a member of our group and a volunteer at the membership table, passed away on October 24, 1986. Barney, as he liked to be called, was a good friend and a fellow volunteer who enjoyed working with people. Barney first helped us at the TI Faire of a year ago and he continued to help me, every week, thereafter at the membership table. Barney was a good man to have around. He was always pleasant and helpful. Because he was a person of high principles he insisted on doing his fair share of the work in our group. For this reason, he was one of the many volunteers who helped to make my job easier. In addition to his work, he was always of good humor. For these reasons, he will be always remembered by all of us. May he rest in peace...

Respectfully submitted,
Don Jones
Membership chairman



Don Jones

Holiday greetings and felicitations to all of you sports fans out there in TI Land!

This is going to be a mercifully short article this month. The main and the most important item has to do with membership renewals. If you haven't renewed your membership yet, and if you want to take advantage of the $3.00 discount, you have only to the last day of this month. All envelopes postmarked by 31 December 1986 will be allowed to renew at the $15.00 rate. As of 1 January 1987, the renewal rate will be $18.00. Save money and renew now!!! All renewals are $15.00. This includes attending and non-attending members. The only exceptions are for our overseas members. For them, the renewal rate is $18.00 before 1 January 1987. After that time, the renewal rate is $21.00. The difference is for the additional postage. Also, remember, do not send cash. Please send a check, a money order, or a bank draft. Make your checks out to the Chicago Area TI Users' Group.

Any members who volunteered to distribute membership information, to TI owners, in their zip code areas, should pick up a free disk of their choice at our library table. Eligibility must be confirmed by Pat Vetter, our volunteer coordinator and chairman. This is merely one small way in which we wish to show our appreciation for those who volunteer as it's the volunteers who keep our group strong. If you bothered to read my last article, you can see how much I depend on the volunteer element of our group. As I think about it, all of us are volunteers. You too can become a part of the team. Don't be bashful; just step right up.

As this is the end of another year, I don't really have a lot to say except thank you to all of the members who have helped make my job a pleasant and rewarding one. I also wish to thank Larry Blandin for having the confidence in me to nominate me for vice-president of the group. I look forward to another good year working with all of you again. I wish all of you the happiest of holidays and a most peaceful, joyous, and blessed new year with many more to come.

Miscellaneous Notes: Ollie Hebert

Concerning: the MILLER GRAPHICS' ADVANCED DIAGNOSTICS disk.

Put a write-protect tab on your original disk and then copy all of the COMMAND FILES from your original disk to a backup disk. Each DISPLAY VARIABLE 80 file is a command file and can be edited (or created) with TI/TK/BK/FUNL-WRITER or such. To use Advanced Diagnostics, you must boot up with your original disk (in drive #1) because of the extensive copy protection scheme employed. Before using a command file (other than DIAGCONFIG, which runs automatically), swap to your backup disk. Why, you may ask? Your original disk has only 26 sectors (0-25) as opposed to the expected 40 sectors. The command files R&WTEST, READTEST and SEEKTEST will fail on every sector above track 25 (because they weren't formatted on the original) and you will have thoughts like:

A) Advanced Diagnostics has a bug in it.

B) My disk and/or hardware is faulty.

Your backup disk will have the normal 40 sectors and these command files should work properly. If they don't, you probably really do have a problem (assuming that you have set HS properly for your system).

If you haven't found it yet, there is a very good demonstration program on the AD disk. CF DSK1.DEMO which then runs DEMO-1 which then runs DEMO-2. When they finish, CF DSK1.DIAGCONFIG to return to your own configuration. You have edited DIAGCONFIG for your own (CC) color combinations, (OD) printer parameters, (HS) head step time, and (SD) active drive #, haven't you? I use 16,5,2,2 for CC and 3 for HS with my CorComp controller/Teac drives. HS of 10 worked fine for my TI controller/TI drive.

Sometimes the DEMO-1 and/or DEMO-2 file fails to start correctly on both my original and my backup disks. The "C" of "Command File" was being dropped. I Edited the last line of DEMO and the last line of DEMO-1 so that they now have a couple of leading spaces. This seems to have cured the intermittent problem.

I'll send George Smith & Bob Demeter (librarians) a copy of my DSDDHEADER command file. It does the same thing that MG's DISKHEADER command file does for SSSD disks but for DSDD (CorComp formatted) disks. Both files are disk sweepers. That is, they overwrite sectors 0 & 1 so that the disk looks like it has been freshly formatted. This is simply a turbo **TOTAL FILE DELETION** process. That's right, folks, **ALL** data on the disk will be lost, so think about it for a while before you tap the enter key.

NEW SUBJECT: Pardon me. I dropped a digit in my recent "UPGRADE YOUR DISK SYSTEM" article. The paragraph beginning with "5:" should be corrected to: ...276-1564A **34** Position... I'll try to be more careful in the future.

Address any correspondence to:
Ollie Hebert Rt. 4, Box 23 Brewton, AL 36426

PRACTICAL PROGRAMMING PRACTICES

Implementing "display at" in LOGO

John Hedstrom

Just bought a copy of TI LOGO II ($20) and am impressed by its capabilities, especially the ease of drawing lines.

LOGO reminds me of FORTH in so far as user-defined instructions can be created from the built-in instruction set. It's simpler to learn than FORTH (some 147 instructions as compared to about 463 for FORTH), and it seems more highly developed as a product (better user manual, comes on a module instead of a disk, has music commands implemented, etc.). TI FORTH seems to have been rather hastily released in contrast to the amount of time put into the TI LOGO II package.

Though the graphics capabilities are superior to TI BASIC, the built-in printing and string-handling commands are on a par or worse. Below is a user-defined instruction that parallels the fix for emulating Extended BASIC's "display at" in BASIC. It slices the text character-by-character and outputs one character at a time to specific XY coordinates using PutTile (similar to HCHAR in BASIC).

```
TO TRY
; LOGO "DISPLAYAT"
; BY JOHN HEDSTROM
; DECEMBER 11 1986
CS PRINT [ENTER TEXT:] B MAKE "S RL PRINT [ENTER COLUMN 0-31:] B MAKE "X F RL
      PRINT [ENTER ROW 0-23:] B MAKE "Y F RL
D :S :X :Y
END
TO B
BEEP WAIT 5 NOBEEP
END
TO D :S :X :Y
CS MAKE "W LENGTH :S
REPEAT :W [MAKE "S1 F :S MAKE "L LENGTH F :S REPEAT :L [PT CN F :S1 :X :Y
      MAKE "S1 BF :S1 I] PT 32 :X :Y I MAKE "S BF :S]
END
TO I
MAKE "X :X + 1
END
```

After this is typed in, the program can be run with "TRY". Entering "THIS IS A TEST", "9", and "11" will output a centered message. It doesn't work with numbers and some symbols in certain positions. "'1986' WAS A VERY GOOD YEAR!" works.

Like FORTH, the code can be a bit cryptic. Below is an annotated listing for those interested. My comments are in parentheses and user-defined instructions are underlined.

```
TO TRY ("TRY" will call the whole program)
; (the semicolon is used for remarks, similar to REM in BASIC)
ClearScreen PRINT [ENTER TEXT:] Beep MAKE "String (equal to) ReadLine (1st input)
      PRINT [ENTER COLUMN 0-31:] Beep MAKE "X (coordinate) (equal to) First (takes
      the number out of RL list) ReadLine (2nd input) PRINT [ENTER ROW 0-23:] Beep
      MAKE "Y (coordinate) (equal to) First ReadLine (3rd input)
Displayat :String :X (coordinate) :Y (coordinate)
END
```

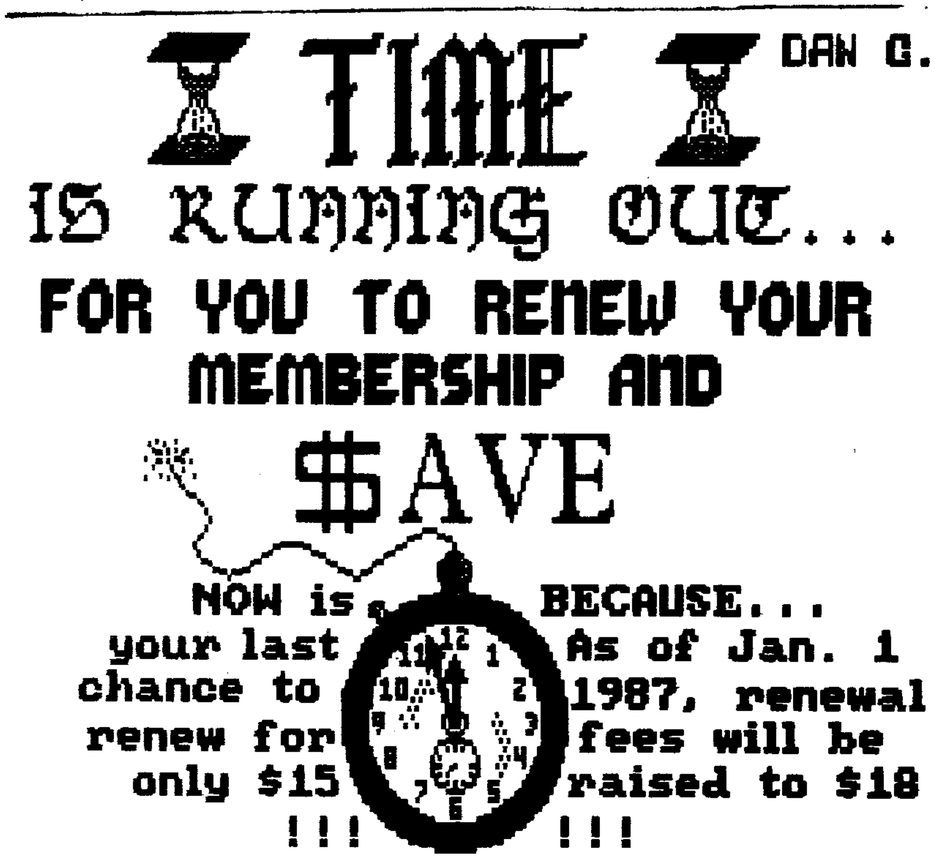
```
TO Beep
BEEP WAIT 5 NOBEEP (turns a tone on for 5/60ths of a second and then off)
END
```

(The above is an expendable test procedure. The following is the "displayat" procedure that can be plugged into a LOGO program. It's called with "D :S :X :Y". The three variables are required.)

```
TO Displayat :String :X (coordinate) :Y (coordinate)
ClearScreen MAKE "Words (equal to) LENGTH (# of words in) :String
REPEAT :Words (# of times to repeat the following) [MAKE "String1 (equal to)
       First (word of) :String MAKE "Letters (equal to) LENGTH (# of letters in)
       First (word of) :String REPEAT :Letters (# of times to repeat the following)
       [PutTile (of) CharacterNumber (of) First (letter of) :String1 (at) :X :Y
       (coordinates) MAKE "String1 (equal to everything) ButFirst (letter of)
       :String1 IncreaseX (coordinate)] PutTile (#) 32 (the space character) (at)
       :X :Y (coordinates) IncreaseX (coordinate) MAKE "String (equal to everything)
       ButFirst (word of) :String]
END

TO IncreaseX (coordinate)
MAKE "X (equal to) :X + 1
END
```

(Variable list: String=text input, X & Y=coordinates input, Words=# of words in text, String1=each word of text, Letters=# of letters in each word of text. The format is: MAKE "A 5 where :A then represents 5.)


TIME
DAN G.
IS RUNNING OUT...
FOR YOU TO RENEW YOUR MEMBERSHIP AND
$AVE
NOW is your last chance to renew for only $15 !!!
BECAUSE... As of Jan. 1 1987, renewal fees will be raised to $18 !!!

LIBRARY UPDATE

Disk Number: 41 Total Files: 10

Filename	Size	Type	Rating	File Description
COMODE Req: X-Basic	56	I/V 254		Very well done graphic program. Original name is Commodore theather
DCOPY Req: E/A option 5	20	PROGRAM		Editor Assembler program compactor and copier
DCOPYDOC Req: TIW type program	8	D/V 80		Documentation for DCOPY program.
DSK-SEC/TK Req: TIW type program	21	D/V 80		Programming aid chart. Shows track and sector arrangement. Shows SS/SD-DS/DD
GOKP Req: Gram Kracker	34	PROGRAM		Gram Kracker gram 0 program that gives you a 16 digit keypad.
GHOSTSPELL Req: E/A	119	D/F 80		Editor Assembler option 3 game.
JOYST/TEST Req:	8	PROGRAM		Tests the joystick and fire button. Outputs a graphic screen display.
KEYPAD/TEX Req: TIW type program	10	D/V 80		Tutorial on how to edit gram 0 to make and use the 16 digit keypad.
MONOPLYFIX Req: TIW type program	17	D/V 80		File that tells how to make changes to the Monopoly program.
XPREP Req: X-Basic	10	PROGRAM		File that changes D/F 128 programs to D/F 80 and D/F 80 to D/F 128.

Disk Number: 71 Total Files: 26

Filename	Size	Type	Rating	File Description
CHARDF Req: X-Basic	16	D/F 80		Part of Flight Planner program.
DPAIIND Req: X-Basic	2	D/V 80		Flight planner program.
DPAVIND Req: X-Basic	1	D/V 80		Flight planner program.
DPAVRFD Req: X-Basic	2	D/V 80		Flight planner program.
DRIVES Req: X-Basic	2	I/F 16		Flight planner program.
FLIGHT Req: X-Basic	24	PROGRAM		Main part of Flight planner program.
FLIGHTLOAD Req: X-Basic	16	PROGRAM		Loader for Flight planner program.
LIST Req: X-Basic	6	PROGRAM		Flight planner program.
PLANES Req: X-Basic	10	PROGRAM		Flight planner program.
READ_ME Req: TIW type program	8	D/V 80		Docs. for Flight planner program.
ROUTES Req: X-Basic	17	PROGRAM		Flight planner program.
SCREENDUMP Req: X-Basic merge file	4	D/V 163		Flight planner program.

Disk Number: 71 (Continued)

Filename	Size	Type	Rating	File Description
WEIGHT Req: X-Basic	14	PROGRAM		Flight planner program.
N3104Q Req: X-Basic	2	D/V 80		Flight planner program.
JRB Req: X-Basic	1	D/V 80		Flight planner program.
511 Req: X-Basic	2	D/V 80		Flight planner program.
123JJDJD Req: X-Basic	2	D/V 80		Flight planner program.
CAT Req: X-BASIC	4	PROGRAM		PART OF FLEX-FILE program. Won 1st. prize in 86 programming contest
FLEX/DOC Req: TIW type program	32	D/V 80		Documentation for FLEX-FILE program.
FLEXSORT Req: X-Basic	7	PROGRAM		Part of FLEX-FILE program.
LOAD-FLEX Req: X-Basic	2	PROGRAM		X-Basic loader for FLEX-FILE program.
NFLEX Req: X-Basic	26	PROGRAM		Part of FLEX-FILE program.
TEST Req: X-Basic	2	I/V 80		Part of FLEX-FILE program.
UNDER Req: X-Basic	2	I/V 80		Part of FLEX-FILE program.
BF Req: X-Basic	45	PROGRAM		All Star Baseball. 2 player game. Use keyboard to control players.
SUPE2 Req: X-Basic	9	PROGRAM		Superman 2. Save the city before the atomic sun destroys it.

Disk Number: 72 Total Files: 15

Filename	Size	Type	Rating	File Description
FLOAT Req: c99	9	D/F 80		Assembly language for Floating point. A c99 program.
FLOAT;DOC Req: TIW type program	37	D/V 80		Documentation for Float point.
FLOAT;R Req: c99	2	D/V 80		Part of Float point program.
FTEST;C Req: c99	9	D/V 80		Demo of Float point program.
L/MO-GAMES Req:	10	D/F 80		Part of Personal Library program.
LIBRARY Req: X-Basic	35	PROGRAM		Main part of Personal Library program.
MARCH Req:	7	PROGRAM		March a stegosaurus thru a jungle. Won 1st prize in 86 pgm.contest child. div.
README Req: TIW type program	11	D/V 80		Documentation for SC_LOAD 4.1
SCLOAD Req: Supercart	45	D/F 80		Supercart menu loading program. Loads 2 pages of menues.

Disk Number: 72 (Continued)

Filename	Size	Type	Rating	File Description
SORT Req: X-Basic	9	D/F 80		Part of Personal Library program.
TERMCHESS Req:	32	PROGRAM		Play chess with someone over the phone.
TRANFERDIS Req: E/A	27	D/F 80		Send an entire disk at one time. Sends 90 sectors at a time. Very fast.
COMET Req: Basic	23	PROGRAM		Question and answer game about comets. There are at least 50 informative questions
QUITOBJ/XB Req: E/A		D/F 80		Program that verifies the use of FCTN = Won 3rd prize in 86 programming contest.
QUITSAFE/X Req:		D/V 80		Source code for QUITSAFE program.

Disk Number: 73 Total Files: 10

Filename	Size	Type	Rating	File Description
GETKEYS Req:	23	D/V 80		Source for Megaload program.
MEGALOAD Req: Supercart option 5	32	PROGRAM		8 page supercart menu loader.
MEGA_CHARA Req:	25	D/V 80		Source for MEGALOAD program.
MEGA_MAIN Req:	72	D/V 80		Source for MEGALOAD program.
MEGA_MENU Req:	46	D/V 80		Source for MEGALOAD program.
MEGA_SAVE Req: Supercart	8	PROGRAM		Program to save your customized menues with Megaload.
MEGA_TIW Req:	69	D/V 80		Source for MEGALOAD program.
MEGA_UPDAT Req:	20	D/V 80		More source for MEGALOAD
SC_CHARA2 Req:	25	D/V 80		Part of MEGALOAD program.
SC_CHARA3 Req:	25	D/V 80		Part of MEGALOAD program.

Disk Number: 74 Total Files: 13

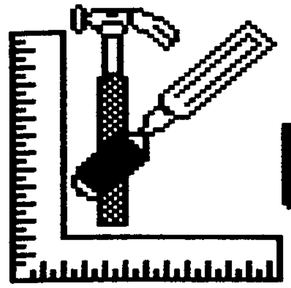
Filename	Size	Type	Rating	File Description
ATOMS_P Req:	25	PROGRAM		RLE picture
BARNEY_P Req:	25	PROGRAM		RLE picture
BLOOM_P Req:	25	PROGRAM		RLE picture
CARTOON_P Req:	25	PROGRAM		RLE picture
COKECAN_P Req:	25	PROGRAM		RLE picture
COUNT_P Req:	25	PROGRAM		RLE picture

Disk Number: 74 (Continued)

Filename	Size	Type	Rating	File Description
DEMON_P Req:	25	PROGRAM		RLE picture
GREMLIN_P Req:	25	PROGRAM		RLE picture
GRIM_P Req:	25	PROGRAM		RLE picture
MXRLDOC2 Req: TIW type program	28	D/V 80		Documentation for the RLE program.
REDDEATH_P Req:	25	PROGRAM		RLE picture
RLE Req: E/A	35	D/F 80		RLE program. Use to create and load pictures. E/A option 3.
SPACEWK_P Req:	25	PROGRAM		RLE picture

Disk Number: 75 Total Files: 8

Filename	Size	Type	Rating	File Description
ANA Req:	54	PROGRAM		RLE picture
BOATRACE Req:	54	PROGRAM		RLE picture
DEATHEAD Req:	54	PROGRAM		RLE picture
DROPLET_P Req:	25	PROGRAM		RLE picture
ELVIRA Req:	54	PROGRAM		RLE picture
GREEKRUINS Req:	54	PROGRAM		RLE picture
JANE-M_P Req:	25	PROGRAM		RLE picture
TIGER_P Req:	25	PROGRAM		RLE picture



HARD TIMES

Al Stump

Ok guys and gals this is it. Everyone was wondering where it was , now lets get it together and build our 32k console modification. I am going to present this on the assumption that the builders have no previous electronic experience. If you have the luxury of electronic experience you may proceed at your own pace, but I feel this project should be directed towards the user who wants to gain experience and enhance his/her system simultaneously.

The first item on the agenda is the parts list. Since I am going to present this in two parts, the parts list will also be in two parts. The parts list for part 2 will be put at the end of this article to avoid confusion. Also listed will be the tools required to complete this project successfully. Please adhere to the list closely unless you have the expertise to substitute items that will perform identically to the ones specified. Do not substitute for the circuit board unless you are an experienced circuit builder, it was chosen because the printed coordinates give me an excellent vehicle to describe the necessary connections. As in all missions of this sort,you are all operating independantly of your own free will and on your own volition. The secretary will disavow all knowledge of your actions. (I will do the same.) I will attempt to provide assistance to users who have completed part 1 by the next meeting if they bring the board to the meeting.

PARTS LIST

QUAN.	NAME/DESCRIP.	SOURCE.
1	EXP. CIRCUIT BD.	RADIO SHACK :276-170 $2.69
2	28 PIN I.C. SOCKET	RADIO SHACK :276-1997 $ .89 ea. DO NOT SUB.
3	.1 MFD 50V CAP DISC	RADIO SHACK :272-135 OR 1069 (NOTE1)
1	22 MFD TANTALUM CAP	RADIO SHACK :272-1437 $ .89 (NOTE1)
	22-24 Ga. SOLID WIRE	RADIO SHACK :278-1306 $2.19 (NOTE1)
	ROSIN CORE SOLDER	RADIO SHACK : 64-006 $2.19 (NOTE1)

TOOL LIST

DIAGONAL CUTTERS (SMALL)
LONG NOSE PLIERS (SMALL)
WIRE STRIPPERS (ADJUSTABLE)
SOLDERING IRON (25-30 WATT PENCIL TYPE W/STAND CLEANING SPONGE)
SMALL PHILLIPS SCREWDRIVER (TO OPEN CONSOLE)
1 THIRD HAND (USEFUL WHEN TINNING WIRE)

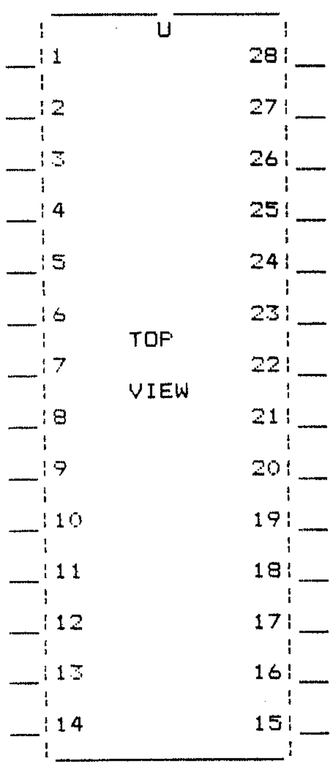
NOTE 1: I OBTAINED THESE ITEMS FROM MY WELL STOCKED JUNK BOX. THE PART NUMBERS GIVEN ARE FROM THE RADIO SHACK CATALOG AND SHOULD WORK FINE, BUT I HAVEN'T USED THESE PARTS MYSELF. THE MAIN CONCERN IS THAT THE CAPACITORS DO NOT STAND TALLER THAN 3/8 INCH ABOVE THE BOARD.

CONSTRUCTION

First of all before starting the actual construction there are a few points to cover. We are modifing a complicated device, so be careful. Follow directions exactly. There are options that the experienced builder can add, but be sure you have adequate experience before deviating from the instructions that I am giving here. One option would be to use a connector to connect the memory expansion to the back of the cartridge connector. The project as written will require that the memory be soldered to the cartridge connector. That is one of the reasons for specifing solid wire, less chance for a short to occur.

Two areas of concern where you may need assistance if you are inexperienced at the techniques of soldering, this requires that several connections be made to the main CPU board in the console, and that the memory chips be stacked in two sets of two. This will require that good soldering technique be used. If you are leery of those ares of the project get someone to assist you with them.

Now we can start. Take the 28 pin socket in your hand. We need to become familiar with it. See the drawing below. Note that this is a top view. Notice how the pins are numbered.

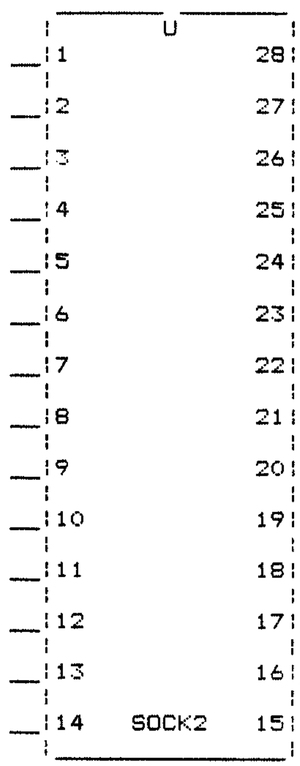


28 PIN SOCKET

All pin numbers are referenced from the notch at at the top of the socket. We will use this to keep track of what we are doing. This in conjunction with the numbering on the board should give us an excellent chance for a successful project.

Now to get familiar with the circuit board. If you take the board out of its packaging carefully so as not to break it, and then place it in your hand with the foil patterns down (shiny strips that we will solder to) we can carefully inspect the other side. Notice how there are letters and numbers printed on the brown surface of the board. Let us now set the standard as to how we will orient the board for future reference. Make sure that the row of holes marked x is to your left, the row marked y is to your right. This should place the words CAT. NO. upside down and toward your stomach. We will keep the board in this position for parts insertion. For future reference the row marked x will be ground and the row marked y will be _5 volts. The words CAT. NO. are to be kept towards your body AT ALL TIMES><. When we turn the board over to solder the rows x and y will change sides. In other words we will turn the board along it's long axis. If that is perfectly clear then we can proceed.

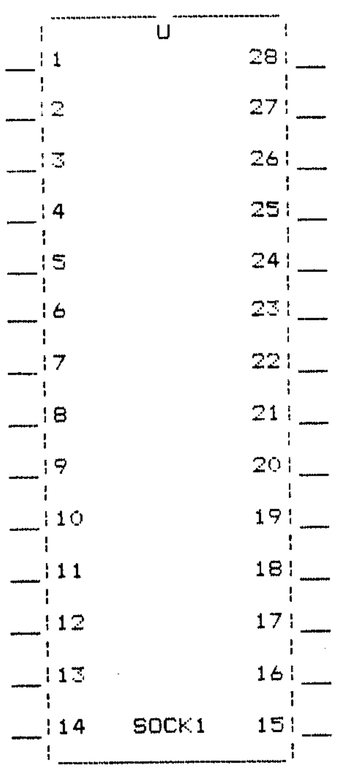
Lets look at the socket layout on the board. The next drawing will show how the sockets are to be placed in respect to each other.



Now we can place the sockets in their final locations. Pin 14 of socket 1 goes into hole C-2, this puts pin 15 in hole G-2. Pin 1 should be in C-15, and pin 28 should be in hole G-15. Socket 2 pin 14 is placed in hole C-18 and pin 15 is now in hole G-18. This should place pins 1 and 28 of socket 2 in C-31 and G-31 respectively.Now for the key to a successful project. Double check the work so far. If all is in order lay a piece of cardboard over the sockets so that the board can be turned over for soldering.

Let's plug the iron in to the wall outlet and let it warm up. Check the temperature by rubbing the solder against the tip periodically. When it starts to melt the iron is just about warm enough. Now we will TIN the tip. Tinning is a process of coating the tip with a coat of solder to protect it and insure a good heat flow to the pieces to be joined. After giving the tip a good coating of solder, wipe the tip on a damp rag or sponge. It is now tinned. RULE !1 is to always keep your iron tip tinned.

Now that the iron is ready, turn the board over keeping the sockets pressed into the holes so that we solder them in the right position. Check to make sure that they are in the right position. Now to solder them in. Touch the tip of the iron to the point where the foil of the board meets the wire of



the pin, now touch the solder to all three of them. It should flow into the connection smoothly. Remove the solder after leaving enough to cover just that one connection. Don't let it cover the other holes. Pull the iron away and let the joint cool. Repeat this procedure for each pin sticking through the foil. Voila!!! You have just soldered successfully. Practice this carefully because these are the easy connections. Have a cup of coffee or cola, you deserve it. Now retin the iron and get ready for the next steps.

We have two areas left to work on this month.They are as follows. Parts with board references and parts with socket references. The name defines how we locate the parts, on the circuit board. Board referenced parts will be located by the numbers printed on the board, whereas socket referenced parts will be described by the socket number and the pin on that socket to be connected.

MOUNTING BOARD REFERENCED PARTS

The first parts that we will mount are the (3) .1 mfd bypass capacitors, and the 22 mfd tantalum capacitor. The connections will be shown as follows:

E-1 -------- .1 MFD -------- F-1

THIS SHOULD BE READ AS .1 MFD GOES BETWEEN ROW E HOLE 1><< AND ROW F HOLE 1><<.

CAPACITOR MOUNTING LIST

E-1 -------- .1 MFD -------- F-1
E-16 -------- .1 MFD -------- F-16
E-32 -------- .1 MFD -------- F-32
C-1 -------- 22 MFD -------- H-1 THIS CAPACITOR SHOULD BE PLACED ON THE OPPOSITE SIDE OF THE .1 MFD FROM SOCKET 1. IT WILL BE LAYING ON THE COORDINATE LETTERING, WITH THE LEADS (WIRE) BENT OVER TO GO INTO THE APPROPIATE HOLES.

Once we have the capacitors in the correct holes, hold them in with one finger, turn the board over, bend the leads away from each other to hold them in place. Once we have the leads bent over we can move our finger. Now use the same procedure to solder them in place that we used for the sockets, making sure that only the holes with the leads sticking out are covered with solder. Now take the diagonal cutters and place the cutting edge right at the end of the cone formed by solder on the lead. Hold the free end of the lead in your other hand, cut the prodruding lead off. Be careful because the cut leads can fly across the room and injure someone, nesides we will use these pieces of wire as jumpers in our next step.

JUMPER MOUNTING LIST

The jumpers we are going to use will be made by cutting the leads from the capacitors in half. This will give us 16 pieces about 5/8 inch long. Using the distance between X-1 and A-1 as a measure, we want to bend the ends of the jumpers over. They will now look like heavy staples. These can be inserted into the holes as described in the JUMPER MOUNTING LIST. This is a quick illustration of how to make jumpers.

```
--------X--------     ---X--X---    --
       CUT              BENDS      |  | DONE
```

INSERT JUMPERS

FROM		TO	
X-1	--JUMPER--	A-1	As each jumper is inserted, hold it in place
X-2	--JUMPER--	A-2	with your finger, turn the board over and bend
X-16	--JUMPER--	A-16	the two protruding ends out with the long nose
X-17	--JUMPER--	A-18	pliers. Then proceed to the next jumper until
X-32	--JUMPER--	A-32	all 12 jumpers have been inserted into the
J-1	--JUMPER--	Y-1	board and have had their legs bent out. The
J-13	--JUMPER--	Y-13	legs should be bent out just enough to hold
J-15	--JUMPER--	Y-15	the jumper in place. Once all the jumpers have
J-29	--JUMPER--	Y-29	been inserted, turn the board over and solder
J-31	--JUMPER--	Y-31	all the jumpers. Use the same procedure as we
G-16	--JUMPER--	I-15	did before for the sockets and capacitors. We
G-32	--JUMPER--	I-31	have now completed the board referenced parts.

Now we are on the home stretch. All we have left for this month is to install the socket referenced parts. These parts will actually be insulated wires. Using any color wire except red or black, cut 23 pieces 23/8 inches long, now cut 25 pieces 12 inches long. Cut two more pieces of wire 12 inches long, using red wire for one and black for the other. Take the wire strippers and being careful not to nick the wire, strip 1/4 inch of insulation off of EACH end of the short 23/8 inch wires. Strip 1/4 inch of insulation off of one end of the (27) 12 inch long wires.

The red and black wires will be installed using the board references. Put the stripped end of the black wire in hole B-1 and put the stripped end of the red wire in hole I-1. Turn the board over and solder both wires to the foil. Cut off the excess stripped end past the cone of solder. The black wire will be the ground and the red wire will be the _5 volt connection.

Using the holes in row B beside socket 2, put short wires beside the following pins; 2,3,4,5,6,7,8,9,10,11,12 and 13. Turn the board over and solder on the foil side, making sure that the insulation of the wire is pushed up to the board surface before soldering. Cut off the excess stripped end after soldering. Now lets go to the other side of socket 2 and using the holes in row H, put short wires beside the following pins; 27,25,24,23,22,21,19,18,17,16 and 15. Turn the board over and observing the same precautions as before solder the short wires to the foil and cut off the excess. Put long wires in the holes beside pin 20 of BOTH SOCKET 1 AND SOCKET 2. Solder as we did the other wires and cut off the excess.

We're almost done. I hope you have taken adequate breaks to avoid over tiring your eyes. Lets go and check for shorts. (A short is where the solder crosses the insulating space between two adjacent foils. If you find one, reheat the solder and remove the solder that crosses the insulating space.

For our final operation of the month, we are going to wire the pins on socket 2 to their equivalent on socket 1. This means that pin 2 of each socket will be connected together, the same for pin 3,4,5 etc. Note that not all pins are going to be used. Pin 1 is not used at all, pin 20 of each socket gets only the long wire. In fact why don't we put in a long wire on each sockets pin 20 now, use the holes in row H for the long wires. Solder and trim as usual. Push the short wires on the right side of socket 2 against the board straight out from the socket. Take a long wire and insert in socket 1 pin 27 row H. Pull up the short wire from socket 2 pin 27 and pull the free end down to socket 1, insert it in socket 1 pin 27 row I. Solder both wires and trim. Do not bury the long wires under the short wires, pull them up by the socket as you wire the short wires to each pin of the socket. Repeat the same procedure with pins 25, 24, 23, 22, 21, 19, 18, 17, 16 and 15. In each case insert the long wire in row H and the short wire in row I. Use the same procedure for the left side of socket 2, pulling the wires down to socket 1. The long wires go into row B and the short wires go into row A. The procedure is repeated for pins 2-13. Solder and trim each connection as it is completed. Check for shorts and if you aren't sure about your progress, bring it to the meeting and I will look it over for you.

This is a very ambitious project, but I have attempted to make it as simple as possible so that even the unexperienced user could successfully complete it. If you aren't sure about something STOP and ask someone. I can be reached through the BBs. Leave private mail for !330. The BBs number for those who don't use it frequently is 312-966-2342.

PARTS REQUIRED FOR NEXT MONTH

(4) HITACHI 6264LP-15 THESE MAY BE IN STOCK AT MIDWEST ENGINEERING. THEIR NUMBER IS 312-362-9034. CALL WEEKDAYS AFTER ABOUT 6 P.M. PRICE FOR 1-5 $4.00 ea, 6-20 $3.50 ea, over 20 $3.00 ea.

THE BASIC ASSEMBLER

Steve Peacock

CHANGE SCREEN COLOR AND REDEFINE CHARACTERS

This month we will learn how to change the character definition of each character. In order to do this we must write some data to the proper address. This month I will also show you how to change the color of the screen. This uses the VWTR command. Below you will see a table that shows all of the addresses for the 16 standard character sets, the CURSOR and EDGE CHARACTER. This table is used when redefining a character. Please note, if your program is called from BASIC or EXTENDED BASIC the address is not the same.

	CALL FROM ASSEMBLY	CALL FROM BASIC		CALL FROM ASSEMBLY	CALL FROM BASIC		CALL FROM ASSEMBLY	CALL FROM BASIC		CALL FROM ASSEMBLY	CALL FROM BASIC
CURSOR			EDGE								
30	>08F0	>03F0	31	>08F8	>03F8						
SET ONE			SET FIVE			SET NINE			SET THIRTEEN		
32	>0900	>0400	64	>0A00	>0500	96	>0B00	>0600	128	>0C00	>0700
33	>0908	>0408	65	>0A08	>0508	97	>0B08	>0608	129	>0C08	>0708
34	>0910	>0410	66	>0A10	>0510	98	>0B10	>0610	130	>0C10	>0710
35	>0918	>0418	67	>0A18	>0518	99	>0B18	>0618	131	>0C18	>0718
36	>0920	>0420	68	>0A20	>0520	100	>0B20	>0620	132	>0C20	>0720
37	>0928	>0428	69	>0A28	>0528	101	>0B28	>0628	133	>0C28	>0728
38	>0930	>0430	70	>0A30	>0530	102	>0B30	>0630	134	>0C30	>0730
39	>0938	>0438	71	>0A38	>0538	103	>0B38	>0638	135	>0C38	>0738
SET TWO			SET SIX			SET TEN			SET FOURTEEN		
40	>0940	>0440	72	>0A40	>0540	104	>0B40	>0640	136	>0C40	>0740
41	>0948	>0448	73	>0A48	>0548	105	>0B48	>0648	137	>0C48	>0748
42	>0950	>0450	74	>0A50	>0550	106	>0B50	>0650	138	>0C50	>0750
43	>0958	>0458	75	>0A58	>0558	107	>0B58	>0658	139	>0C58	>0758
44	>0960	>0460	76	>0A60	>0560	108	>0B60	>0660	140	>0C60	>0760
45	>0968	>0468	77	>0A68	>0568	109	>0B68	>0668	141	>0C68	>0768
46	>0970	>0470	78	>0A70	>0570	110	>0B70	>0670	142	>0C70	>0770
47	>0978	>0478	79	>0A78	>0578	111	>0B78	>0678	143	>0C78	>0778
SET THREE			SET SEVEN			SET ELEVEN			SET FIFTEEN		
48	>0980	>0480	80	>0A80	>0580	112	>0B80	>0680	144	>0C80	>0780
49	>0988	>0488	81	>0A88	>0588	113	>0B88	>0688	145	>0C88	>0788
50	>0990	>0490	82	>0A90	>0590	114	>0B90	>0690	146	>0C90	>0790
51	>0998	>0498	83	>0A98	>0598	115	>0B98	>0698	147	>0C98	>0798
52	>09A0	>04A0	84	>0AA0	>05A0	116	>0BA0	>06A0	148	>0CA0	>07A0
53	>09A8	>04A8	85	>0AA8	>05A8	117	>0BA8	>06A8	149	>0CA8	>07A8
54	>09B0	>04B0	86	>0AB0	>05B0	118	>0BB0	>06B0	150	>0CB0	>07B0
55	>09B8	>04B8	87	>0AB8	>05B8	119	>0BB8	>06B8	151	>0CB8	>07B8

```
SET FOUR              SET EIGHT             SET TWELVE            SET SIXTEEN
 56 >09C0   >04C0      88 >0AC0   >05C0     120 >0BC0   >06C0     152 >0CC0   >07C0
 57 >09C8   >04C8      89 >0AC8   >05C8     121 >0BC8   >06C8     153 >0CC8   >07C8
 58 >09D0   >04D0      90 >0AD0   >05D0     122 >0BD0   >06D0     154 >0CD0   >07D0
 59 >09D8   >04D8      91 >0AD8   >05D8     123 >0BD8   >06D8     155 >0CD8   >07D8
 60 >09E0   >04E0      92 >0AE0   >05E0     124 >0BE0   >06E0     156 >0CE0   >07E0
 61 >09E8   >04E8      93 >0AE8   >05E8     125 >0BE8   >06E8     157 >0CE8   >07E8
 62 >09F0   >04F0      94 >0AF0   >05F0     126 >0BF0   >06F0     158 >0CF0   >07F0
 63 >09F8   >04F8      95 >0AF8   >05F8     127 >0BF8   >06F8     159 >0CF8   >07F8
```

```
################################################################################

100 REM BA3B==>Basic Assembler #3 Basic Version
110 REM CHANGE SCREEN COLOR AND REDEFINE CHARACTERS
120 REM (C)1985 S. PEACOCK
130 REM YOU MAY WANT A 'CALL CLEAR' HERE
140 READ A$
150 CALL CHAR(112,A$)
160 READ A$
170 CALL CHAR(113,A$)
180 READ A$
190 CALL CHAR(114,A$)
200 DATA FF818181818181FF
210 DATA 3C42A581A589423C
220 DATA 925438FE38549200
230 CALL SCREEN(16)
240 MES1$="p    q    r"
250 DISPLAY AT(12,8):MES1$
260 GOTO 260
270 END
```

```
################################################################################

********************************************************************************
*
*PROGRAM BA3A==>Basic Assembler #3 Assembly Version
*CHANGE SCREEN COLOR AND REDEFINE CHARACTERS
*(C)1985 S. PEACOCK
*
********************************************************************************
       REF  VMBW,VWTR     *REFERENCE TO MULT. BYTE WRITE AND WRITE TO REG.
       REF  VSBW          *REFERENCE TO SINGLE BYTE WRITE
       DEF  START         *DEFINE START OF PROGRAM (MAY BE ANY WORD)
*************************
START  LI   R0,>0880      *LOAD THE ADDRESS OF CHAR. 112 IN REG. ZERO
       LI   R1,DEF1       *LOAD THE DEFINITION TO ASSIGN TO CHAR 112
       LI   R2,8          *LOAD THE NUMBER OF BYTES TO WRITE
       BLWP @VMBW         *WRITE THE BYTES
       LI   R0,>0B88      ****THIS SECTION COULD BE WRITTEN:
       LI   R1,DEF2       ****LI   R0,>0B80      (SINCE THE THREE LETTERS
       LI   R2,8          ****LI   R0,DEF1        ARE IN SEQUENCE.  LEAVE OUT
       BLWP @VMBW         ****LI   R2,24          THE LABEL 'DEF2' AND 'DEF3'
       LI   R0,>0B90      ****BLWP @VMBW          BUT NOT THE CODE)
       LI   R1,DEF3
       LI   R2,8
       BLWP @VMBW
*************************
DEF1   DATA >FF81,>8181,>8181,>81FF   *THE HEX CODE FOR THE REDEFINITION
```



```
DEF2   DATA >3C42,>A581,>A589,>423C   *
DEF3   DATA >9254,>38FE,>3854,>9200   *
*************************
       LI   R0,>07FF      *WRITE TO REG. 7 THE COLOR WHITE ON WHITE
       BLWP @VWTR         *WRITE TO REG. THIS CHANGES THE TOP AND BOTTOM
*************************BORDER OF THE SCREEN TO WHITE.
       LI   R0,>0384      *ADDRESS OF CHAR. SET ONE
       LI   R1,>FF00      *CHANGE SET ONE'S COLOR TO WHITE ON WHITE
       BLWP @VSBW         *WRITE NEW COLOR TO SET ONE
*************************
       LI   R0,0          *PRINTS A 'SPACE' TO ALL SCREEN POSITIONS
       LI   R1,>2000      *THUS CHANGING THE SCREEN TO WHITE
LOOP1  BLWP @VSBW
       INC  R0            *INCREASE THE VALUE OF REG. 0
       CI   R0,767        *COMPARE REG. 0 TO 767
       JLE  LOOP1         *IF LESS OR EQUAL TO 767, PRINT ANOTHER 'SPACE'
*************************
       LI   R0,>038E      *ADDRESS OF CHAR. SET 11
       LI   R1,>1000      *CHANGE SET 11'S COLOR TO BLACK ON TRANSPARENT
       BLWP @VSBW
*************************
MES1   TEXT 'p    q    r'  *THE MESSAGE TO PRINT (HAVE BEEN REDEFINED)
       LI   R0,361        *THE STARTING SCREEN POSITION TO PRINT
       LI   R1,MES1       *MESSAGE TO PRINT
       LI   R2,11         *NUMBER OF BYTES TO PRINT
       BLWP @VMBW         *BRANCH TO MULT. BYTE WRITE
*************************
       JMP  $             *JUMP TO SELF (AN ENDLESS LOOP)
       END
```

T H E B A S I C A S S E M B L E R #4 By Steve Peacock

DEMONSTRATION OF HOW TO USE THE JOYSTICK

This month I am presenting a program that will demonstrate how to use the joysticks. Two new codes are introduced, they are KSCAN and MOVB. KSCAN is the routine that reads the joysticks. It will also read the keyboard. MOVB stands for MOVe Byte. This command moves the left (most significant) byte of a word. For example the command -MOVB @>8374,R1- will move the left (most significant) byte that is in the address >8374 into the left (most significant) byte of R1. The value in >8374 is not changed. This is used when you want to compare two values, as you can see in this months program.

If you have an assembly program written for the MINI-MEMORY and want to type it in using the EDITOR/ASSEMBLER, you will have to convert some numbers to mnemonics. Below is a table that lists the changes.

MINI-MEMORY	EDITOR/ASSEMBLER	
>6018	GPLLNK	Link to GROM Routine
>601C	XMLLNK	Link to ROM Routine
>6020	KSCAN	Keyboard Scan
>6024	VSBW	VDP Single Byte Write
>6028	VMBW	VDP Multiple Byte Write
>602C	VSBR	VDP Single Byte Read
>6030	VMBR	VDP Multiple Byte Read
>6034	VWTR	VDP Write to Register
>6038	DSRLNK	Link to Device Service Routine
>603C	LOADER	Tagged Object Loader

```
      >6040   NUMASG   Numeric Assignment Routine
      >6044   NUMREF   Get Numeric Parameter
      >6048   STRASG   String Assignment Routine
      >604C   STRREF   Get String Parameter
      >6050   ERR      Error REporting Routine
```

For example if you had a line that looked like this -BLWP @>6024-, it would be changed to -BLWP @VSBW-, for the EDITOR/ASSEMBLER.

```
##############################################################################################

100 REM PROGRAM BA4B==>Basic Assembler #4 Basic Version
110 REM DEMONSTRATION OF HOW TO USE THE JOYSTICK
120 REM (C)1985 S. PEACOCK
130 REM YOU MAY WANT A 'CALL CLEAR' HERE
140 R=10
150 C=13
160 CALL HCHAR(R,C,88)
170 CALL JOYST(1,X,Y)
180 IF Y<>4 THEN 230
190 IF R=1 THEN 170
200 CALL HCHAR(R,C,32)
210 R=R-1
220 GOTO 370
230 IF Y<>-4 THEN 280
240 IF R=24 THEN 170
250 CALL HCHAR(R,C,32)
260 R=R_1
270 GOTO 370
280 IF X<>4 THEN 330
290 IF C=32 THEN 170
300 CALL HCHAR(R,C,32)
310 C=C_1
320 GOTO 370
330 IF X<>-4 THEN 170
340 IF C=1 THEN 170
350 CALL HCHAR(R,C,32)
360 C=C-1
370 CALL HCHAR(R,C,88)
380 GOTO 170
390 END

##############################################################################################

*********************************************************************************************
*
*PROGRAM BA4A==>Basic Assembler #4 Assembly Version
*DEMONSTRATION OF HOW TO USE THE JOYSTICK
*(C)1985 S. PEACOCK
*
*********************************************************************************************
       REF  KSCAN,VSBW    *KEYBOARD SCAN/WRITE SINGLE BYTE TO SCREEN
       DEF  START         *START OF PROGRAM
START  LI   R0,300        *START POSITION TO PRINT 'X'
       LI   R1,>5800      *LOAD HEX CODE FOR 'X' INTO REG. 1
       BLWP @VSBW         *PRINT 'X'
       LI   R1,>0100      *>0100 FOR JOYSTICK NUMBER 1 (>0200 FOR JOYSTICK #2)
       MOVB R1,@>8374     *MOVE LEFT BYTE (>01) INTO THE ADDRESS >8374 (KSCAN)
```



```
LP     BLWP @KSCAN        *BRANCH TO KEYSCAN ROUTINE
       CLR  R1            *CLEARS REG. 1 WHERE THE VALUE >8376
**************************WILL BE PLACED. RIGHT BYTE ZERO WILL BE ZERO FOR
**************************COMPARISON.
       MOVB @>8376,R1     *CHECK 'Y' RETURN. WHEN THE JOYSTICK IS USED THE 'Y'
**************************RETURN WILL BE PUT IN THE ADDRESS >8376. THIS VALUE
**************************IS MOVED INTO REG. 1. THE 'Y' RETURN CAN BE
**************************>FC, >00, >04 (-4, 0, 4)
       CI   R1,>0400      *IF 'Y' RETURN >04 THEN JOYSTICK PUSHED UP
       JNE  T1            *JUMP TO NEXT COMPARISON IF 'Y' RETURN NOT
**************************EQUAL TO >04
       CI   R0,32         *TO SEE IF TOP BORDER IS HIT. THE LARGEST POSITION
**************************POSSIBLE IS 32 (TOP RIGHT)
       JLT  LP            *IF TOP BORDER HIT GO BACK TO MAIN LOOP AND READ KSCAN
       LI   R5,>2000      *IF NOT HIT, LOAD 'SPACE'
       BLWP @VSBW         *PRINT 'SPACE'
       AI   R0,-32        *DECREASE PRINT POSITION ONE ROW
       JMP  PG            *JUMP TO PRINT
T1     CI   R1,>FC00      *IF 'Y' RETURN >FC00 THEN JOYSTICK PUSHED DOWN
       JNE  T2            *JUMP TO NEXT COMPARISON IF 'Y' RETURN NOT
**************************EQUAL TO >FC00
       CI   R0,735        *TO SEE IF BOTTOM BORDER IS HIT. THE SMALLEST POSITION
**************************POSSIBLE IS 735 (BOTTOM LEFT)
       JGT  LP            *IF HIT GO BACK TO MAIN LOOP AND READ KSCAN
       LI   R5,>2000      *IF NOT HIT LOAD 'SPACE'
       BLWP @VSBW         *PRINT 'SPACE'
       AI   R0,32         *INCREASE PRINT POSITION ONE ROW
       JMP  PG            *JUMP TO PRINT
T2     MOVB @>8377,R1     *CHECK 'X' RETURN. WHEN THE JOYSTICK IS USED THE 'X'
**************************RETURN WILL BE PUT IN THE ADDRESS >8377. THIS VALUE
**************************IS MOVED INTO REG. 1. THE 'X' RETURN CAN BE
**************************>FC, >00, >04 (-4, 0, 4)
       CI   R1,>0400      *IF 'X' RETURN >0400 THEN JOYSTICK PUSHED RIGHT
       JNE  T3            *JUMP TO NEXT COMPARISON IF 'X' RETURN NOT
**************************EQUAL TO >0400
       LI   R8,31         *SEE   !START AT TOP RIGHT POSITION COMPARE THIS VALUE
RL     C    R0,R8         *IF    !WITH THE VALUE OF REG 0 (THE MAIN PRINT
       JEQ  LP            *RIGHT !POSITION) IF EQUAL JUMP OUT OF THE LOOP. IF
       AI   R8,32         *WALL  !NOT ADD 32 (1 ROW) AND COMPARE. DO THIS
       CI   R8,768        *IS    !UNTILL THE BOTTOM RIGHT CORNER IS REACHED.
       JLT  RL            *HIT   !IF NO HIT, LOAD A 'SPACE' AND PRINT
       LI   R5,>2000      *LOAD 'SPACE'
       BLWP @VSBW         *PRINT 'SPACE'
       INC  R0            *INCREASE PRINT POSITION ONE COLUMN
       JMP  PG            *JUMP TO PRINT
T3     CI   R1,>FC00      *IF 'X' RETURN >FC00 THEN JOYSTICK PUSHED LEFT
       JNE  LP            *JUMP TO TO MAIN LOOP. NO OTHER COMPARISON TO MAKE.
       LI   R8,0          *SEE   !START AT TOP LEFT POSITION COMPARE THIS VALUE
LL     C    R0,R8         *IF    !WITH THE VALUE OF REG 0 (THE MAIN PRINT
       JEQ  LP            *LEFT  !POSITION) IF EQUAL JUMP OUT OF THE LOOP. IF
       AI   R8,32         *WALL  !NOT ADD 32 (1 ROW) AND COMPARE. DO THIS
       CI   R8,737        *IS    !UNTILL THE BOTTOM RIGHT CORNER IS REACHED.
       JLT  LL            *HIT   !IF NO HIT LOAD A 'SPACE' AND PRINT.
       LI   R5,>2000      *LOAD 'SPACE'
       BLWP @VSBW         *PRINT 'SPACE'
       DEC  R0            *DECREASE PRINT POSITION ONE COLUMN
PG     LI   R1,>5800      *ASCII CODE FOR 'X'
       BLWP @VSBW         *PRINT 'X'
```

```
*       LI    R4,4000       *A SHORT !TO SLOW DOWN THE PROGRAM
*       DEC   R4            *DELAY   !REMOVE THE THREE ASTERISKS.
*       JNE   $-2           *LOOP    !
        JMP   LP            *BACK TO READ JOYSTICK AGAIN
        END
```

FINANCIAL UPDATE:

CHICAGO AREA TI99/4A USERS GROUP
SUMMARY OF CASH TRANSACTIONS
OCTOBER 15-NOVEMBER 30, 1986

	TOTAL	FAIRE	LIBRARY	MEMBER-SHIP	OTHER
RECEIPTS:					
FAIRE	5,734.96	841.01	1,067.00	2,888.00	938.95
OTHER	1,749.50		390.00	1,328.00	31.50
	7,484.46	841.01	1,457.00	4,216.00	970.45
DISBURSEMENTS:					
MAILING	233.96			73.24	560.72
T SHIRTS	603.50				603.50
VENDOR DINNER	240.00	240.00			
BUTTON MACHINE	249.20	249.20			
ADVERTISING	1,041.25	917.75		123.50	
PRINTING	340.55				340.55
MODULES	288.33				288.33
PRIZES	160.00	160.00			
SPEAKERS	127.00	127.00			
SUNDRY	387.40	297.71		6.00	83.69
	3,671.19	1,991.66	0.00	202.74	1,476.79
INCREASE IN CASH	3,413.27	-1,150.65	1,457.00	4,013.26	-906.34

TRADING TIMES

Remember our own George Holod? He has a silver and black console for sale for which he is asking $65. He also has two new Mini Memory cartridges. He is asking $26 for each. He will pay postage. You can reach George at 2301 Churchill Dr., Oxnard, Ca 93033, (805)483-3464.

Also from California comes this offer. "J" Bruce Anderson has an entire system for sale including two consoles, PEB, 32K, Controller and SS drive, speech, Smith Corona TP-1 printer with cables ribbon and print wheel, joysticks, monitor, cassette recorder and software and literature too numerous to list. He can be reached at the above address or contact him at (818)357-0960 after 7:00 pm Pacific time. He is asking $895 for the entire package.

FROM OTHER ORPHANAGES

Jack Topham

Last month I told you of a modification to add a switch to put the console into a monochrome mode. I made the modification and it works. I can see color or kill color for true monochrome. Black on white is 100% free of color bleeding. I am typing this with white on dark gray which is what you get when blue color is killed. The screen is far more legible in monochrome than in color. I found that the length of wire was critical so I kept them to only about 3 inches. The 100 pf capacitor was too much, 68 pf worked perfectly. The project took about two hours and was not as easy as I was led to believe. Call me at (312) 577 2054 before you attempt it. I'll share my experience along with a hint or two.

Rich Klein's BASICALLY YOURS was picked up in the LARO, FLORIDA UG NewsLetter with credit to our CUG. My column was also picked up but without credit. One for Rich...Zip for me!

The K-TOWN UG in Tennessee advises that if your PRBASE disk has a file called LABEL:USR that it runs in XB and will print out the PRB disk label.

From the MOBILE, AL S.M.A.U.G comes some clarification as to the types of disk formats used on the 99.

SSSD=SINGLE SIDED SINGLE DENSITY 90K DSDD=DOUBLE SIDED SINGLE DENSITY 180K
SSDD=SINGLE SIDED DOUBLE DENSITY 180K DSKK=DOUBLE SIDED DOUBLE DENSITY 360K
DSQD=DOUBLE SIDED QUAD DENSITY 720K

Both CORCOMP and MYARK controllers offer DSDD while MYARK offers DSQD with an EPROM upgrade to their controller. The drives must have the required capability or the controller can not do its thing. A DSDD controller can read any format but QUAD. Quad is unique and requires a quad drive and high quality disks. Be sure you ask for and get sound advise before buying drives and a controller. Use the collective experience of your 99 mates.

BAYOU BYTE UG in Lake Charles, LA reviewed a new printer product called DOTS-PERFECT which easily installs in a TI or EPSON printer(MX, FX, or RX). D-P adds four new features via the existing control buttons.

1. Near letter quality(NLQ)
2. IBM Graphics
3. Buffer Clear
4. Panel Font selection

These features are activated with combinations of the ON-LINE, LF, and FF buttons. A 20% discount puts the price at $64. Call 800 368-7737.

A super TIP comes from BOISE UG for the TI WRITER. To create a file with out line feeds yet FORMATTED, do the following: Use thr FORMATTER to print the text file to DISK instead of the printer. Go back to EDIT and do a Print File (PF) replacing PIO with C space DSKn.filename. This saves a formatted file without Line Feeds which is required by CSGD DOCUPRINT for example.

From your humble servant comes a TIP for PRBASE. The DOCS say the the command C will provide a copy utility but it does not since C is used for something else. Look at your disk and you will see a file called "PRBUTL/BAS" which will load in XBASIC. This utility offers every conceivable COPY mode for DATA files. A hidden goodie. Thanx Mr. Warren. By the By, PRB runs in MYARK XBII and very fast too.

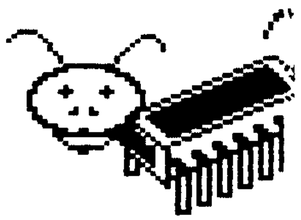
From AMARILLO, TEXAS comes a handy trick that lets you include BASIC program listings in a TI WRITER file.
LIST "DSKn.filename" then use Include File(.IF DSKn.filename).

If another mod to your console is your meat then read on. From CALGARY, ALBERTA CANADA is a simple mod that will stop and start the computer. Wire a small SPST toggle switch between pins 1 and 64 Of the 9900 processor chip. The two pins are the last ones on each side at the notched end of the chip. At your risk they advise.

The NORTHWEST OHIO UG listed a program that I typed in and have provided to the library. You type in your Telephone number and it generates all the possible letter combinations. You could end up with DSK-DRIVE or SIT-STILL or EAT-PIZZA. Try it for your friends.

RAM BUGS

Texincia Lubbock



I certainly hope everyone had as fine a Holiday as I had. Not being one to see someone suffer after surgury, I aligned myself with the medical group responsible for *JIM McMAHON'S* recovery and had a wonderful time caring for his every whim. Too bad I had to be back in town for a prior commitment on New Year's Eve, but someone has to be a designated driver so the others can party. It actually is more fun on that night to stay sober and watch the rest of the world fall down.

Now for some of my resolutions. I, *TEXINCIA LUBBOCK*, do hereby resolve to do the following during *1987*: 1 - Answer my mail more quickly on the *USER'S GROUP BBS*; 2 - Lay *OFF* of *DON JONES* a little; 3 - Lay *ON NICK IACOVELLI*; 4 - Lay *WITH BUZZ KRANTZ* a little more often; 5 - Buy a pair of new roller skates and loan them to *HANK ELLERMAN* for his use at the *FIFTH ANNUAL TI FAIRE*; 6 - Buy *SAM PINCUS* some *BUNS* to go with his *HOT DOGS*; 7 - Find out what *DAVE HAKELY'S* home telephone number is for *GRANT SCHMALGAMIER*.

I was glad to see the *SWAP MEET* work as well as it did at the *DECEMBER MEETING*. A lot of people found what they were looking for and a lot of people got rid of what they no longer wanted. Thanks to *RICH KLEIN* for being so honest about the *GRAM CARD*. It's nice to be able to see a products short comings before actually laying out the hard earned bucks on a piece of junk.

The *STAR (SUPER TI ASSEMBLY ROUTINES)* package by *COM-LINK*, however, was a completely different story. Not only did *JACK TOPHAM* do a nice job with his presentation (on very short notice I might add) of the product, but the product itself is a useful, well written and worthwhile investment. The best part of *STAR* is that it is *"FAIRWARE"*. In other words, it is available from the *GROUP LIBRARY* for only $2.00. The *FAIRWARE* concept is almost one-in-the-same with *"FREEWARE"*, in that once you have the program, if you like and use it, you are requested to send a nominal amount of money to the author, in this case *MICHAEL RICCIO* who requests *"$10 - $15 (or what you think its worth)"*.

My suggestion is that you get out the checkbook and the your pen and send the check to him now, before you "forget". It's a powerful package and will enhance your *EXTENDED BASIC* for a lot less money than some of the other programming enhancements available. If your going to use *FREEWARE* or *FAREWARE*, then *SUPPORT THE AUTHOR!*

Speaking of programming, I understand that *Mike Makismek* (aka: *"The Frogman* on the USER'S GROUP BBS) might be giving a demonstration of the *PASCAL* programming language at the February meeting. In addition to *******'S* demonstration, *DAVE* is looking for other members who have written software they would like to demonstrate for the group. For further information, contact *DAVE* at the January meeting or give him a call at home.

I would like to take this opportunity to express my support for the *HOT LINE* proposed at the December meeting. I think it's a good idea for everyone to be able to get updated information regarding the group and our meetings on a 24 hour a day basis. Maybe we can even get it installed prior to any flooding brought about by the spring rains.

Thanks to everyone who responded to my *DRAW TEXINCIA CONTEST*. See *DAVE'S* related article elsewhere in this edition. I must say he exercised some of the finest diplomacy ever to be printed. Winners will be required to write a series of articles for *DAVE* to anaylize in lieu of having to take time off work to spend on his office couch.

In closing, I must congratulate *SANDY BARTELS* on her new office as *PRESIDENT* of our group. *BUTCH GOLDSTEIN* slides into second position as *PRESIDENT IN CHARGE OF VICE (aka: VICE-PRESIDENT)*. The *NICE TRY DEPARTMENT* goes out to *DON JONES*, a real show of appreciation for all the fine work he has done for the group.

Don't forget to *RENEW YOUR MEMBERSHIP* before January 1st! It's the last chance you'll have to save $3.00 while renewing. See you at the meeting.

CHICAGO AREA TI-99/4A USERS' GROUP, INC.
APPLICATION FOR MEMBERSHIP

Date_____

Name _____

Address _____

City, State & Zip _____

Telephone Number (_____)_____

Occupation _____

Computer Equipment Owned _____

_____

_____

Please List Any Computer Languages That You May Know _____

_____

Special Computer Related Interests And/Or Needs _____

_____

How did you hear of our group? _____

****

Annual Dues for Membership - $18.00 ($21.00 for Non-Attending Status)
(Over-seas members: Please add $3.00 for postage)
Disk or Cassette? (Non-Attending Members only, please circle one)
Make checks payable to:

Chicago Area TI-99/4A Users' Group, Inc.

Send completed application and check to:

Don Jones (Membership Chairman)
c/o Chicago Area TI-99/4A Users' Group, Inc.
P.O. Box 578341
Chicago, Illinois 60657

WINNERS

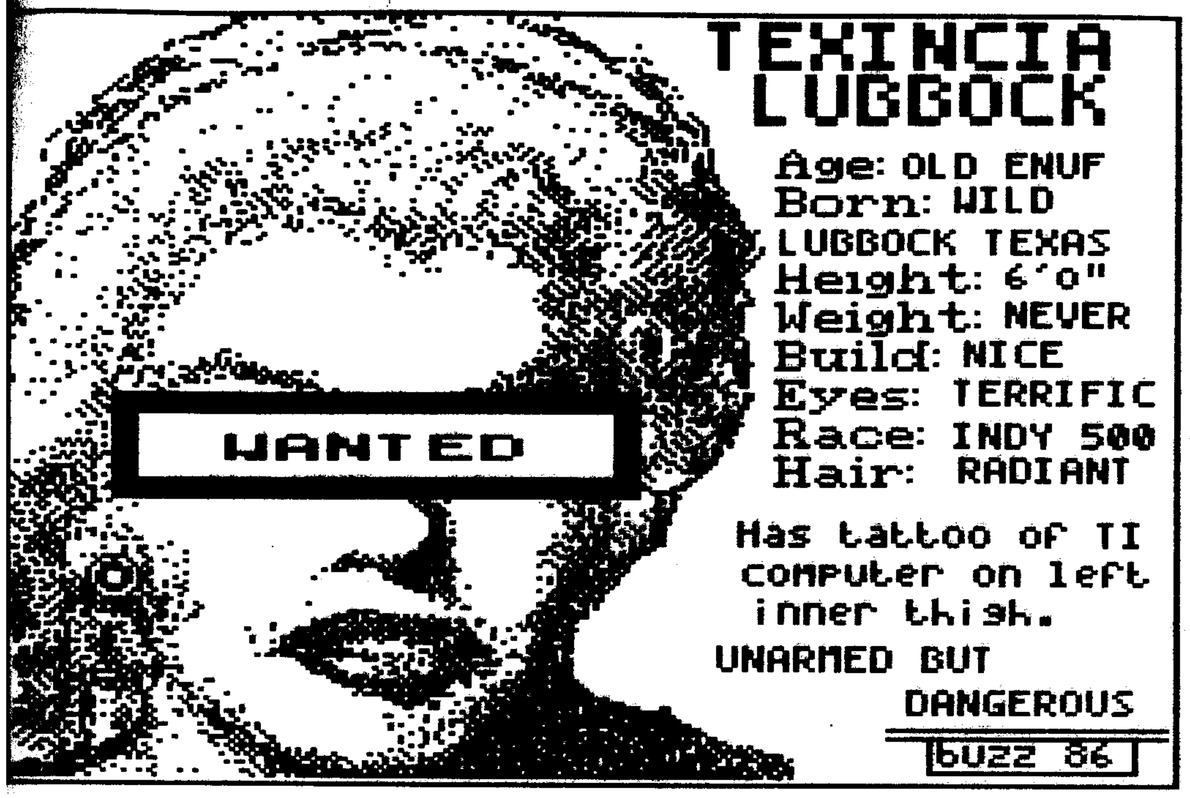
DRAW TEXINCIA CONTEST WINNERS: Dave (The Judge) Wakely

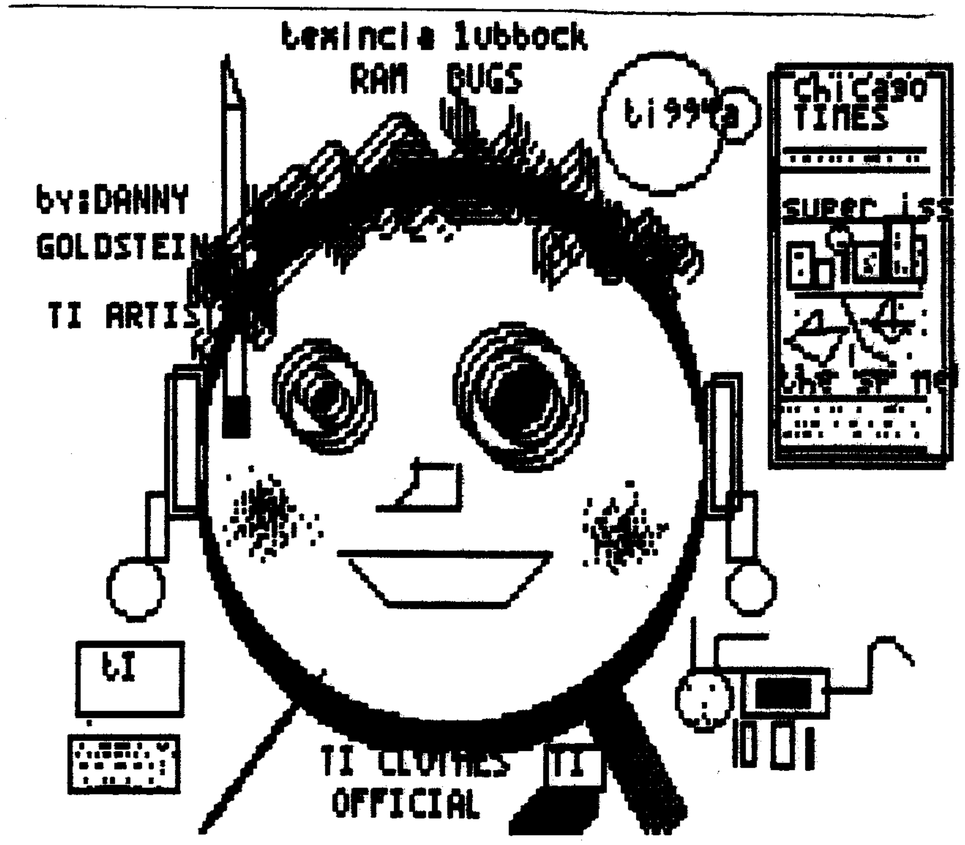
"Five foot two, eyes of blue, weighing two hundred and forth-two!"
-Texincia Lubbock
Nov. 30, 1985

The above is her own physical description, the exact image left (perhaps best left) to the reader's imagination. To remedy this, if indeed there is a remedy, the Chicago User's Group has just concluded its first and positively only "Draw Texincia" contest. The (disk) envelopes, please:

Best original drawing: Dan Gronowski
Best use of RLE graphics: Buzz Krantz
Best pre-puberty entry: Danny Goldstein

Our original thought was to award appropriate prizes, in which case Dan would get the latest Artist Companion package, Buzz gets a hug from Texincia herself, and Danny gets a pat on the head. However, in the spirit of "duplicate prizes will be awarded", all three will receive a disk from the group library. Okay Carole, I've now done my penance for all those late columns. And say hello to Bruce for me.





CHICAGO TI USER'S GROUP
PO BOX 578341
CHICAGO, IL 60657

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REMARKS

Carole Goldstein

Super special thanks go out this month to Todd Kaplan. If it wasn't for him this issue might not have been. Its easy to blow a file on a disk and we've all learned the hard way to make backups. But through a fluke of the system I lost both the original newletter file and my backup. There was nothing to do but scream. Fortunately, I screamed *"HELP"* in the right direction. Todd came over and was able to reconstruct most of the file, a good weeks work if I had to reconstruct it from scratch. Thank you Todd, from everyone that reads this newsletter.

Some of your submissions may not appear this month. Due to time and space limitations, I was unable to get everything in. Due to the problems I had, I was extremely pressed for time. Please try to get your submissions in by the 15th of the month. Sometimes, that rough when the meeting is only a few days before that. But if you have the date in mind maybe you can even start work on the articles before the meeting.

For Your Information: I received a letter from Steve Venable, P.O. Box 97, Mobeetie, Tx 79061. He has formed a TI Users group exclusively for pastors. If you are interested, you can reach him at the above address or at (806)845-3751

For many of you this will be your last issue. It is time to renew membership and I'm sure there are some of you who will let your membership lapse, not because you no longer find your TI99/4A useful, but because you don't make it to more than one or two meetings a year. You figure this is a strong group and if you need us, we will always be there. But perhaps we won't. We have survived for three years of afterlife now because of the support of our membership. I strongly urge you, if you have gotten anything out of our group at all, to renew. Even if you only come once a year for the Faire, your renewal will help insure our ability to continue events such as this.

WE SUPPORT YOU, PLEASE, SUPPORT US!